BULLETIN of the

ATOMIC SCIENTISTS . . .

NOT NEEDED

VOL. 2 JULY 1, 1946 Nos. 1 and 2

The American and Russian Proposals . . . .

The first two meetings of the United Nations Commission on Atomic Energy have produced two developments of great importance.

In the first meeting, on June 13, the program for world-wide control of atomic energy through an International Atomic Development Authority (which was received with widespread approval as a bold and constructive plan when it was first suggested in the Acheson-Lilienthal report) and of its enforcement by the elimination of veto power, was presented to the world by Bernard Baruch as the official proposal of the American government.

In the second meeting on June 19, the representative of USSR, Andrej Gromyko presented an official Soviet proposal aiming at the outlawing of atomic weapons, exchange of atomic information, and creation of a Committee for the study of methods for supervision and enforcement of these covenants.

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Comparison of the Baruch declaration with the Acheson-Lilienthal report shows that while accepting largely the ideas and control mechanisms suggested in this report, Mr. Baruch added the statement that the whole plan will be valuable only if rapid and efficient sanctions are provided against any violator of the agreement. He, therefore, proposed that as far as sanctions against nations violating the atomic energy convention are concerned, the power of veto be eliminated.

This exemption from the veto power was approved by the delegates of Great Britain, Canada, Brazil, China and Mexico, but was opposed by Gromyko on behalf of the USSR, and has since been criticized in the Russian press as an attempt to establish an American "atomic world domination." Thus, the questions of sanctions and of the veto power became the first point of disagreement in the Atomic Energy Commission—a controversy which may deadlock its deliberations. Since such a deadlock would be tragic, it is essential to approach the veto provisions in their relation to the international control of atomic energy as dispassionately as possible.

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In discussing the veto power as it applies to atomic energy, one has to distinguish between three aspects of the question.

In the *first stage* of international discussions—which we are now entering—the methods of international control have to be elaborated by the UN Commission, approved by the Security Council, and put into operation by a treaty signed (at least) by all major nations. Since the present attempt is to achieve international control of atomic energy by a treaty between sovereign nations, and a treaty cannot be imposed on any one nation, no majority decisions are possible in this stage. Hence the veto question does not enter.

The *second stage* will be that of the *operation* of the international control. According to the American plan, during this period, an international authority will operate within the territories of all member states, engaging in mining, fabrication, research and inspection activities. These activities will be practically impossible if each single step undertaken by the Authority can be threatened by a possible veto by any one of the major nations. Therefore, the rights of the Authority to operate laboratories and plants, to inspect industrial and research activities, to conduct aerial and other surveys, once defined in the Convention, cannot be subject to veto by individual governments—otherwise the whole Authority will be but a powerless mockery.

In suggesting the abolition of veto, Mr. Baruch referred, however, mainly to the *third* aspect of international control—the procedure in the case of *violation* of the control agreements, and this is where a controversy with USSR is threatening to arise. One may hope that the question of sanctions in the case of violation of the agreement, however important, will not be permitted to stand in the way of a discussion of the mechanism of international control, which constitutes the heart of the whole problem.

The Acheson-Lilienthal report points out that as long as the Atomic Development Authority operates successfully, the world will at least live in the security of a definite knowledge that no nation is preparing for a sudden atomic onslaught. If then, a nation denounces or violates the provisions of the agreement, it gives a clear warning that it is bent on atomic aggression. It is unrealistic to believe that if such a violation ever occurs, the reactions of the other nations will be limited by the sanction provisions agreed upon when the convention was set up. If the violator be a minor nation, sanctions will be certain and swift. If the agreement be violated by a major nation, the other great nations will hardly be deterred from action by the veto power of the violator. The question will then be one of war or peace and it will make little difference whether the threatening war is "legal" or "illegal" under the veto provisions.

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From this point of view the appraisal of the Russian proposals must be based first of all on its attitude towards the establishment of an effective International Atomic Energy Authority, with assured rights of research, production, control and inspection. In this respect, all that can be said of the Russian declaration is that it is not entirely negative. The only detailed suggestions in the Russian plan deal with outlawing of atomic weapons and with the exchange of information. That the Russians would suggest as a first step the outlawing of atomic weapons, and the destruction of existing bombs, could easily have been predicted; that they would also press for rapid release of all atomic

(Continued on last page)

IN THIS ISSUE

The Proceedings of the UN Atomic Energy Commission

The Baruch and Gromyko Statements

The Carnegie Draft Convention

A Review of the Lilienthal Report —Norman Cousins and Thomas K. Finletter

The Availability of Radioactive Isotopes—Announced by the MANHATTAN PROJECT

The Status of Domestic Legislation

Report on U.N. Atomic Energy Commission

Proceedings of the first meeting of the UN Atomic Energy Commission on June 13, 1946.

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OPENING SPEECH BY T. LIE, Secretary General of UN.

Gentlemen, In opening this meeting of the Commission to deal with the problems raised by the discovery of atomic energy and other related matters, I am deeply aware of the importance of the occasion. The discovery of atomic energy not only marks a great step forward in scientific knowledge, but by the immensity of its implications, it presents a problem which will require all human ingenuity and wisdom for its satisfactory solution. There is scarcely one thinking man or woman in the world today who does not realize that for good or evil mankind has taken a step which may change the political, economic and social structure of our society. All seem agreed that only effective international control can safeguard the right use of atomic energy and ensure that it will be applied for the good of mankind rather than for its destruction.

When the United Nations met in San Francisco to draw up the Charter of the United Nations, atomic energy as a deadly weapon was as yet unknown to the world. At the conference of the Foreign Ministers of the United Kingdom, United States of America and the Union of Soviet Socialist Republics in Moscow, on December 27th, 1945, the three Powers decided to propose, together with China, France, and Canada, to the General Assembly a resolution for the establishment of a Commission to deal with the problems raised by the discovery of atomic energy and other related matters. The General Assembly unanimously adopted this resolution without change on January 24th of this year. The very fact that this was the first resolution adopted by the first session of the General Assembly indicates the importance which the United Nations attaches to international control of atomic energy. The text of the resolution is before you and I shall not take up your time in quoting from it. I will only recall that the United Nations and the whole civilized world expects you to proceed with the utmost speed to inquire into all phases of the problem. You must make recommendations which will ensure the peaceful use of atomic energy and the final elimination from national armaments of atomic weapons and of all other major weapons adaptable to mass destruction. The Atomic Energy Commission is one of the organs of the United Nations. As such, it will draw its strength from the principles which guide this organization. In particular, the Commission is charged with responsibility to serve the Security Council in its task for maintaining international peace and security.

The Commission, which will submit its reports and recommendations to the Security Council and which will be accountable for its work to that body does occupy a position of immense importance in the entire United Nations structure. To a considerable extent the entire course of world peace will depend upon the success of this Commission. The problem of atomic energy is truly one without precedent. For the first time in history a power has been put in our hands which at one single stroke might destroy more than many generations can build. There are those who despair of the future and doubt if man can devise a system to control this new power. I do not agree. It cannot be beyond the resources of the human mind, which has made such enormous strides in its technical development, to control it, to prevent its abuse, and to use it for the good of all. The scientists who have worked on this discovery have been the first to point out its fear of economic implications and to ask for international control. The statesmen of the peace-loving nations express with one voice their desire to harness this fateful energy. People all over the world demand that atomic energy shall be made to lighten the drudgery of their working days rather than fill their lives with fear.

With this support, and despite the greatness of its task, the Commission has every reason to look forward to success. Your problems are in many ways the key to many other problems. Agreement on the major questions of international control of atomic energy should make it possible to approach many other problems with greater ease and confidence. The great significance of atomic energy calls for international statesmanship of the highest order. I feel sure that, given good faith, good will and determination to cooperate, we shall overcome all possible difficulties which may arise in dealing with this epoch-making weapon. Allow me to wish you all a cordial welcome and full success.

BARUCH MADE TEMPORARY CHAIRMAN

MR. LIE: Honorable Delegates, there are many advantages in the fact that the Atomic Energy Commission is holding its first meeting in the United States. This country together with Great Britain and Canada has contributed greatly to the knowledge which we have of the atom and the means of employing its energy. As we are meeting on the soil of the United States, members of the delegations on the Atomic Commission have agreed that it would be fitting to ask its distinguished representative, Mr. Bernard Baruch, to take the chair for the time being. I take great pleasure in asking you to accept this honor. I know that you, Mr. Baruch, will assume this duty with a sense of responsibility, wisdom and foresight. Again I would like to wish you and all other members of the commission all the success.

MR. BARUCH: Thanks for the election, the tribute is to my country and not to me. I think I should like to read a warm message from the President of the United States:

"White House
Washington, D.C.
Bernard M. Baruch.

I ask you as the American Representative on the United Nations Atomic Energy Commission to express to the members my sense of extraordinary importance of the work in which they are about to engage. Nothing concerns the whole world more than the achievement of the purpose that brings them together. I speak for my fellow Americans in wishing them God speed.

HARRY S. TRUMAN"

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At this point Mr. Baruch delivered the major address of the session in which he presented the US plan for international control. This address is reprinted in full on the following pages.

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Proceedings of the second meeting of the United Nations Atomic Energy Commission on June 19, 1946.

The Commission was called to order by its chairman, Dr. Evatt (Australia). The discussion of the report of the rules of procedure committee was postponed to the next meeting at the suggestion of Mr. Gromyko (USSR), and the Commission proceeded at once with the general debate on the statement of the United States representative Mr. Baruch made at the first meeting on June 14.

THE CHAIRMAN (DR. EVATT)

I would just like to make one or two very short observations. First, the resolution of the General Assembly, which established this Commission, requires us now to deal with the problems raised by the discovery of atomic energy and other related matters and instructs us to proceed with the utmost dispatch. Accordingly, we have been commanded to carry out our work in that spirit and to direct our deliberations towards the ends stated, giving time and attention necessary to hear and to study all constructive proposals and all criticisms which are timely.

(Continued on Page 6)

The American Proposal for International Control

. . . presented by *Bernard M. Baruch*

My fellow members of the United Nations Atomic Energy Commission, and my fellow citizens of the world. We are here to make a choice between the quick and the dead. That is our business.

Behind the black portent of the new atomic age lies a hope which, seized upon with faith, can work our salvation. If we fail, then we have damned every man to be the slave of Fear. Let us not deceive ourselves: We must elect World Peace or World Destruction.

Science has torn from nature a secret so vast in its potentialities that our minds cower from the terror it creates. Yet terror is not enough to inhibit the use of the atomic bomb. The terror created by weapons has never stopped man from employing them, for each new weapon a defense has been produced, in time. But now we face the condition in which adequate defense does not exist.

Science, which gave us this dread power, shows that it *can* be made a giant help to humanity, but science does *not* show us how to prevent its baleful use. So we have been appointed to obviate that peril by finding a meeting of the minds and the hearts of our peoples. Only in the will of mankind lies the answer.

It is to express this will and make it effective that we have been assembled. We must provide the mechanism to assure that atomic energy is used for peaceful purposes and preclude its use in war. To that end, we must provide immediate, swift and sure punishment of those who violate the agreements that are reached by the nations. Penalization is essential if peace is to be more than a feverish interlude between wars. And, too, the United Nations can prescribe individual responsibility and punishment on the principles applied at Nuremberg by the Union of Soviet Socialist Republics, the United Kingdom, France and the United States—a formula certain to benefit the world's future.

In this crisis, we represent not only our governments but, in a larger way, we represent the peoples of the world. We must remember that the peoples do not belong to the governments but that the governments belong to the peoples. We must answer their demands; we must answer the world's longing for peace and security.

In that desire, the United States shares ardently and hopefully. The search of science for the absolute weapon has reached fruition in this country. But she stands ready to proscribe and destroy this instrument—to lift its use from death to life—if the world will join in a pact to that end.

In our success lies the promise of a new life, freed from the heart-stopping fears that now beset the world. The beginning of victory for the great ideals for which millions have bled and died, lies in building a workable plan. Now we approach fulfillment of the aspirations of mankind. At the end of the road lies the fairer, better, surer life we crave and mean to have.

Only by a lasting peace are liberties and democracies strengthened and deepened. War is their enemy. And it will not do to believe that any of us can escape war's devastation. Victor, vanquished and neutrals alike are affected physically, economically and morally.

Against the degradation of war we can erect a safeguard. That is the guerdon for which we reach. Within the scope of the formula we outline here, there will be found, to those who seek it, the essential elements of our purpose. Others will see only emptiness. Each of us carries his own mirror in which is reflected hope—or determined desperation—courage or cowardice.

There is a famine throughout the world today. It starves men's bodies. But there is a greater famine—the hunger of men's spirit. That starvation can be cured by the conquest of fear, and the substitution of hope, from which springs faith—faith in each other; faith that we want to work together toward salvation; and determination that those who threaten the peace and safety shall be punished.

The peoples of these democracies gathered here have a particular concern with our answer, for their peoples hate war. They will have a heavy exaction to make of those who fail to provide an escape. They are not afraid of an internationalism that protects; they are unwilling to be fobbed off by mouthings about narrow sovereignty, which is today's phrase for yesterday's isolation.

The basis of a sound foreign policy, in this new age, for all the nations here gathered, is that: anything that happens, no matter where or how, which menaces the peace of the world, or the economic stability, concerns each and all of us.

That roughly, may be said to be the central theme of the United Nations. It is with that thought we begin consideration of the most important subject that can engage mankind—life itself.

Let there be no quibbling about the duty and the responsibility of this group and of the governments we represent. I was moved, in the afternoon of my life—shall I say in the late afternoon of my life—to add my effort to gain the world's quest by the broad mandate under which we were created. The resolution of the General Assembly, last January 24, 1946, in London, reads:

> **Section V, Terms of Reference of the Commission**
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> "The Commission shall proceed with the utmost dispatch and inquire into all phases of the problem, and make such recommendations from time to time with respect to them as it finds possible. In particular the Commission shall make specific proposals:
>
> "A. For extending between all nations the exchange of basic scientific inofrmation for peaceful ends;
>
> "B. For control of atomic energy to the extent necessary to insure its use only for peaceful purposes;
>
> "C. For the elimination from national armaments of atomic weapons and of all other major weapons adaptable to mass destruction;
>
> "D. For effective safeguards by way of inspection and other means to protect complying States against the hazards of violation and evasions.
>
> "The work of the Commission shall proceed by separate stages, the successful completion of each of which will develop the necessary confidence of the world before the next stage is undertaken."

Our mandate rests, in text and in spirit, upon the outcome of the Conference in Moscow of Messrs. Molotov of the Union of Soviet Socialist Republics, Bevin of the United Kingdom, and Byrnes of the United States of America. The three foreign ministers, on December 27, 1945, proposed the establishment of this body.

Their action was animated by a preceding conference in Washington on November 15, 1945, when the President of the United States, associated with Mr. Attlee, Prime Minister of the United Kingdom and Mr. MacKenzie King, Prime Minister of Canada, stated that international control of the whole field of atomic energy was immediately essential. They proposed the

formation of this body. In examining that source, the Agreed Declaration, it will be found that the fathers of the concept recognized the final means of world salvation—the abolition of war. Solemnly they wrote:

"We are aware that the only complete protection for the civilized world from the destructive use of scientific knowledge lies in the prevention of war. No system of safeguards that can be devised will of itself provide an effective guarantee against production of atomic weapons by a nation bent on aggression. Nor can we ignore the possibility of the development of other weapons, or of new methods of warfare, which may constitute as great a threat to civilization as the military use of atomic energy."

Through the historical approach I have outlined, we find ourselves here to test if man can produce, through his will and faith, the miracle of peace, just as he has, through science and skill, the miracle of the atom.

The United States proposes the creation of an International Atomic Development Authority, to which should be entrusted all phases of the development and use of atomic energy, starting with the raw material and including:

1. Managerial control or ownership of all atomic energy activities potentially dangerous to world security.

2. Power to control, inspect, and license all other atomic activities.

3. The duty of fostering the beneficial uses of atomic energy.

4. Research and development responsibilities of an affirmative character intended to put the Authority in the forefront of atomic knowledge and thus to enable it to comprehend, and therefore to detect, misuse of atomic energy. To be effective, the Authority must itself be the world's leader in the field of atomic knowledge and development and thus supplement its legal authority with the great power inherent in possession of leadership in knowledge.

I offer this as a basis for beginning our discussion.

But I think, the peoples we serve would not believe—and without faith nothing counts—that a treaty, merely outlawing possession or use of the atomic bomb constitutes effective fulfillment of the instructions to this Commission. Previous failures have been recorded in trying the method of simple renunciation, unsupported by effective guarantees of security and armament limitation. No one would have faith in that approach alone.

Now, if ever, is the time to act for the common good. Public opinion supports the world movement toward security. If I read the sign aright, the peoples want a program not composed merely of pious thoughts but of enforceable sanctions—an international law with teeth in it.

We of this nation, desirous of helping to bring peace to the world and realizing the heavy obligations upon us, arising from our possession of the means of producing the bomb and from the fact that it is a part of our armament, are prepared to make our full contribution toward effective control of atomic energy.

When an adequate system for control of atomic energy, including the renunciation of the bomb as a weapon, has been agreed upon and put into effective operation and condign punishments set up for violations of the rules of control which are to be stigmatized as international crimes, we proposed that:

1. Manufacture of atomic bombs shall stop;

2. Existing bombs shall be disposed of pursuant to the terms of the treaty, and

3. the authority shall be in possession of full information as to the know-how for the production of atomic knowledge.

Let me repeat, so as to avoid misunderstanding: my country is ready to make its full contribution toward the end we seek, subject, of course, to our constitutional processes, and to an adequate system of control becoming fully effective, as we finally work it out.

Now as to violations: in the agreements, **penalties of as serious a nature as the nations may wish and as immediate and certain in their execution as possible, should be fixed for:**

1. Illegal possession or use of an atomic bomb;

2. Illegal possession, or separation, of atomic material suitable for use in an atomic bomb;

3. Seizure of any plant or other property belonging to or licensed by the authority;

4. Wilful interference with the activities of the Authority;

5. Creation or operation of dangerous projects in a manner contrary to, or in the absence of, a license granted by the international control body.

It would be a deception, to which I am unwilling to lend myself, were I not to say to you and to our peoples, that the matter of punishment lies at the very heart of our present security system. It might as well be admitted, here and now, that the subject goes straight to the veto power contained in the Charter of the United Nations so far as it relates to the field of atomic energy. The Charter permits penalization only by concurrence of each of the five great powers—the Soviet Union, the United Kingdom, China, France and the United States.

I want to make very plain that I am concerned here with the veto power only as it affects this particular problem. **There must be no veto to protect those who violate their solemn agreements not to develop or use atomic energy for destructive purposes.**

The bomb does not wait upon debate. To delay may be to die. The time between violation and preventive action or punishment would be all too short for extended discussion as to the course to be followed.

As matters now stand several years may be necessary for another country to produce a bomb, de novo. However, once the basic information is generally known, and the Authority has established producing plants for peaceful purposes in the several countries, an illegal seizure of such plant might permit a malevolent nation to produce a bomb in twelve months, and if preceded by secret preparation and necessary facilities perhaps even in a much shorter time. The time required—the advance warning given of the possible use of a bomb—can only be generally estimated but obviously will depend upon many factors, including the success with which the Authority has been able to introduce elements of safety in the design of its plants and the degree to which illegal and secret preparation for the military use of atomic energy will have been eliminated. Presumably no nation would think of starting a war with only one bomb.

This shows how imperative speed is in detecting and penalizing violations.

The process of prevention and penalization—a problem of profound statecraft—is, as I read it, implicit in the Moscow statement, signed by the Union of Soviet Socialist Republics, the United States and the United Kingdom a few months ago.

But before a country is ready to relinquish any winning weapons, it must have more than words to reassure it. It must have a guarantee of safety, not only against the offenders in the atomic area, but against the illegal users of other weapons — bacteriological, biological, gas—perhaps—and why not? against war itself.

In the elimination of war lies our solution, for only then will nations cease to compete with one another in the production and use of dread "secret" weapons which are evaluated solely by their capacity to kill. This devilish program takes us back not merely to the Dark Ages, but from cosmos to chaos. If we succeed in finding a suitable way to control atomic weapons, it is reasonable to hope that we may also preclude the use of

other weapons adaptable to mass destruction. When a man learns to say "A" he can, if he chooses, learn the rest of the alphabet, too.

Let this be anchored in our minds:

Peace is never long preserved by weight of metal or by an armament race. Peace can be made tranquil and secure only by understanding and agreement fortified by sanctions. We must embrace international cooperation or international disintegration.

Science has taught us how to put the atom to work. But to make it work for good instead of for evil lies in the domain of dealing with the principles of human duty. We are now facing a problem more of ethics than of physics.

The solution will require apparent sacrifice in pride and in position, but better pain as the price of peace than death as the price of war.

I now submit the following measures as representing the fundamental features of a plan which would give effect to certain of the conclusions which I have epitomized.

1. General—The Authority should set up a thorough plan for control of the field of atomic energy, through various forms of ownership, dominion, licences, operation, inspection, research and management by competent personnel. After this is provided for, there should be as little interference as may be with the economic plans and the present private, corporate and state relationships in the several countries involved.

2. Raw Materials—The Authority should have as one of its earliest purposes to obtain and maintain complete and accurate information on world supplies of uranium and thorium and to bring them under its dominion. The precise pattern of control of deposits of such material will have to depend upon the geological, mining, refining, and economic facts involved in different situations.

The Authority should conduct continuous surveys so that it will have the most complete knowledge of the world geology of uranium and thorium. Only after all current information on world sources of uranium and thorium is known to us all can equitable plans be made for their production, refining and distribution.

3. Primary Production Plants—The Authority should exercise complete managerial control of the production of fissionable materials. This means that it should control and operate all plants producing fissionable materials in dangerous quantities and must own and control the product of these plants.

4. Atomic Explosives—The Authority should be given sole and exclusive right to conduct research in the field of atomic explosives. Research activities in the field of atomic explosives are essential in order that the Authority may keep in the forefront of knowledge in the field of atomic energy and fulfill the objective of preventing illicit manufacture of bombs. Only by maintaining its position as the best informed agency will the Authority be able to determine the line between intrinsically dangerous and non-dangerous activities.

5. Strategic Distribution of Activities and Materials — The activities entrusted exclusively to the Authority because they are intrinsically dangerous to security should be distributed throughout the world. Similarly, stockpiles of raw materials and fissionable materials should not be centralized.

6. Non-Dangerous Activities—A function of the Authority should be promotion of the peacetime benefits of atomic energy.

Atomic research (except in explosives), the use of research reactors, the production of radioactive tracers by means of non-dangerous reactors, the use of such tracers, and to some extent the production of power should be open to nations and their citizens under reasonable licensing arrangements from the Authority. Denatured materials, whose use we know always also requires suitable safeguards, should be furnished for such purposes by the Authority under lease or other arrangement. Denaturing seems to have been over-estimated by the public as a safety measure.

7. Definition of Dangerous and Non-Dangerous Activities—Although a reasonable dividing line can be drawn between dangerous and non-dangerous activities, it is not hard and fast. Provision should, therefore, be made to assure constant reexamination of the questions, and to permit revision of the dividing line as changing conditions and new discoveries may require.

8. Operations of Dangerous Activities—Any plant dealing with uranium or thorium after it once reaches the potential of dangerous use must be not only subject to the most rigorous and competent inspection by the Authority, but its actual operation shall be under the management, supervision and control of the Authority.

9. Inspection—By assigning intrinsically dangerous activities exclusively to the Authority, the difficulties of inspection are reduced. If the Authority is the only agency which may lawfully conduct dangerous activities, then visible operation by others than the Authority will constitute an ambiguous danger signal. Inspection will also occur in connection with the licensing functions of the Authority.

10. Freedom of Access—Adequate ingress and egress for all qualified representatives of the Authority must be assured. Many of the inspection activities of the Authority should grow out of, and be incidental to, its other functions. **Important measures of inspection will be associated with the tight control of raw materials, for this is a keystone of the plan.** The continuing activities of prospecting, survey and research in relation to raw materials will be designed not only to serve affirmative development functions of the Authority, but also to assure that no surreptitious operations are conducted in the raw materials field by nations of their citizens.

11. Personnel—The personnel of the Authority should be recruited on a basis of proven competence but also so far as possible on an international basis.

12. Progress by Stages—A primary step in the creation of the system of control is the setting forth, in comprehensive terms of the functions, responsibilities, powers and limitations of the Authority. Once a Charter for the Authority has been adopted, the Authority and the system of control for which it will be responsible will require time to become fully organized and effective. The plan of control will, therefore, have to come into effect in successive stages. These should be specifically fixed in the Charter or means should be otherwise set forth in the Charter for transitions from one stage to another, as contemplated in the resolution of the United Nations Assembly which created this Commission.

13. Disclosures—In the deliberations of the United Nations Commission on Atomic Energy, the United States is prepared to make available the information essential to a reasonable understanding of the proposals which it advocates. Further disclosures must be dependent, in the interests of all, upon the effective ratification of the treaty. When the Authority is actually created, the United States will join the other nations in making available the further information essential to that organization for the performance of its functions. **As the successive stages of international control are reached, the United States will be prepared to yield, to the extent required by each stage, national control of activities in this field to the Authority.**

14. International Control—There will be questions about the extent of control to be allowed to national bodies, when the

(Continued on Page 10)

Report on U.N. Atomic Energy Commission . . *Continued*

(Continued from Page 2)

Already the United States Representative on the Commission, Mr. Baruch, has given the Commission a splendid lead. In his speech he placed before us the outline of the plan for a world authority to deal with atomic energy. The broad features of this plan will appeal to many of us as the proper basis on which to build our proposals. Others might wish to suggest modifications or even to put forward another plan, and this general discussion will be the starting point in our deliberations. So today, and on the next day of our sitting, I hope that the Members of the Commission will be able to indicate their reaction to Mr. Baruch's proposals and indicate the general nature of any alternative plan or proposal which they may wish to bring before the Commission.

After the general discussion is completed—and each Member of the Commission is of course invited to take part in it—I will endeavor to sum up for the benefit of the Commission the area of agreement which is revealed by the general discussion and then I shall put before my colleagues on the Commission practical proposals so as to set about working on a preliminary draft of a Charter which we can then consider in detail.

GENERAL McNAUGHTON: (CANADA)

Mr. Chairman, at the first meeting of the Commission on Friday last, we had the privilege of listening to the constructive and imaginative proposals which were put before us by Mr. Baruch on behalf of the Government of the United States.

I am now authorized to say that the Canadian Government welcomes this approach to the problems before the Commission and that Canada supports the principles on which those proposals have been based. We are well aware that proposals so novel and far-reaching will encounter many difficulties. Some of these, no doubt, will be hard to overcome, but we should not be deterred; for on the success of our efforts the future of the world depends.

The plan which Mr. Baruch has suggested will need the most careful study. If accepted as a basis of discussion in this Commission, as I hope it will, we shall have to examine fully its implications with a view to drawing up concrete and detailed recommendations.

The question of enforcement action arising out of these recommendations may, of course, involve the veto. The Canadian attitude toward the veto power of the five permanent members in the Security Council is that we have never liked it. We accepted it at San Francisco because it seemed the only basis on which the great powers could come together to set up the United Nations Organization.

I suggest, however, that at this stage we should not concern ourselves unduly over the procedure whereby the present decisions of the proposed International Atomic Development Authority should be taken. Rather, I suggest that we should concentrate on the many other aspects of the proposals put forward by the United States Representative on which we must reach agreement before the Authority can be brought into being. If we succeed in achieving a meeting of minds on these aspects, we may find that we have established a degree of confidence which will make it much easier than at present to solve this difficult problem. The question of establishing mutual confidence is certainly a vital aspect of our work at this time.

The Canadian Delegation believes that this can be best promoted by developing specific proposals on the first matter listed in our terms of reference, namely. "for extending between all nations the exchange of basic scientific information for peaceful purposes."

We are deeply conscious in Canada of the responsibilities which have fallen to us in connection with the development of atomic energy. In the national sphere, the Candian Government has introduced legislation to control the production of atomic energy and the materials from which this energy is derived; and to stimulate research and development so that it may be directed toward constructive ends. A bill for this purpose is before the House of Commons in Ottawa, and the debate which has taken place has shown that its principles have been given the widest public support.

This legislation will enable Canada not only to control and promote the development of atomic energy for peaceful purposes in our country, but also to insure that our program may be brought fully into accord with the policies of any world Authority that may be agreed upon.

Our precious supplies of raw materials have already been brought under the full control of the Government so that they may be conserved. An experimental uranium fission plant has been erected. This plant, whose capacity is in no way significant for war purposes, is being developed as a research center and as a source of radioactive products which can be distributed to suitable laboratories and to hospitals for use in medical treatments.

Once appropriate arrangements have been concerted with other nations, we hope to see scientists from all over the world as our guests, and to have our own scientists received in other countries for periods in exchange.

Mr. Chairman, you may be sure that we will bend every effort to advance the high purposes for which this Commission has been established.

SIR ALEXANDER CADOGAN (UNITED KINGDOM):

Mr. Chairman, I am sure that no one who was privileged to listen to the statement made by the Delegate of the United States on June 14 can have failed to be impressed with the importance of the occasion or to be moved by the very obvious sincerity of Mr. Baruch's sentiments. The outline which he then gave of his scheme must have inspired hope in all who are met here together to devise a plan for peaceful development and for defense against the danger that may threaten the world.

His Majesty's Government in the United Kingdom warmly welcome the statement by the United States Representative and are grateful to the United States Government for providing so broad and constructive a basis for the Commission's work. Mr. Baruch's proposals would give effect to the terms of reference of the Commission and would do more by weaving the various specific tasks laid upon the Commission into a complete plan. His Majesty's Government in the United Kingdom greatly hope that it will be possible to create a structure on these foundations and pledge to this work the fullest possible contribution of the United Kingdom Delegation on the Commission.

A particular point in the United States scheme which specially struck the United Kingdom Gevernment is that the International Development Authority would accustom the different nations to working internationally in the atomic field, both for industrial purposes and other specific purposes. Thus its staff will become accustomed to genuine cooperation, instead of being confined to the role of police inspectors. This should help to surmount what has always been forseen as a serious practical difficulty since the work will be such as to attract the keenest scientific minds of every nation. At the same time it will almost certainly prove impossible to dispense with some scheme of inspection and control at least of all "dangerous" activities in the field of atomic energy.

The United States plan makes great demands for confidence and cooperation from all parties. We must recognize that full confidence and cooperation cannot be built up in a day. Consequently, as the terms of reference of the Commission specifically contemplated, the work of building up international control must proceed by stages. His Majesty's Gevernment in the United Kingdom endorse the emphasis laid upon this policy in the statement by the United States Delegate.

They would suggest that in order to promote an atmosphere of goodwill and of confidence in the ultimate success of the proposals it might be well to proceed as soon as may be appropriate with the exchange of scientific information. This would be in accord with the general policy of the Washington Declaration and with the terms of reference of the Commission.

Obviously, this great plan involves risks. The United Kingdom is perhaps particularly conscious of these risks since it suffered so severely from air bombardment in the late war and was the subject of a sustained attempt by the enemy to disrupt its industrial production and the morale of its citizens by unrestricted attack by aircraft and by every fearful new invention which the enemy were able to devise in the short time available to them.

Consequently, His Majesty's Government fully endorse the emphasis laid in the United States statement on the need for condign, immediate and effective penalties against violation of the future international scheme of control. The greatest deterrent value against any such violation will be the knowledge that punishment will be inevitable and overwhelming. Clearly, the scheme outlined by the United States representative raises most important and far reaching questions of political and military procedure as well as problems of a technical and scientific nature. For example, there is the question of the actual weapons with which penalties would be enforced on a transgressor and this is one of the crucial points in the scheme which will require particular study. Peace has been defined as depending always on there being overwhelming power behind just law.

Account would naturally be taken at the same time of any proposals that might be made by other delegations. For their part, however, His Majesty's Government in the United Kingdom, are glad to take the United States scheme as the basis for consideration since in many of its essentials it is in accord with the lines on which they had themselves been approaching the problem. They do not wish therefore, to put forward an alternative scheme, but will apply their own ideas in the discussion of the United States scheme.

His Majesty's Government in the United Kingdom, like the other Governments which are represented on the Commission will, of course, require time to study the very important proposals. The Commission is breaking entirely new ground and while it must never lose sight of the urgency of the problem, it must also proceed carefully and with due consideration of all the many points raised. If this preliminary discussion on which the Commission has embarked reveals that the Governments here represented are agreed on the general line to be followed, it is to be hoped that it may proceed to discuss and determine the method of its work. It must make an early beginning: it must settle where to begin, and then put all its strength and determination into an effort to bring the work to an acceptable and beneficent end.

Mr. President, if I may add one word for myself, I would observe that in past years, it has happened that I have been associated in some way with discussions on the regulation of armaments, control and inspection, and kindred topics. During those years, I have often heard it objected that this scheme or that is impossible. During those same years, it was "impossible" to release the giant atomic forces. Our scientists have now achieved that, so now we too must take part and achieve the "impossible".

* * *

At this point, Mr. Gromyko delivered the major address of this session in which he presented the USSR view on international control. This is reproduced in full on the following pages.

* * *

DR. QUO (CHINA):

I wish to express, on behalf of my government, our keen appreciation of the great contribution that Mr. Baruch has already made at this initial stage of our labors. This is indeed a source of inspiration and encouragement to us all and to an anxious world.

In welcoming the United States Government's proposal as a basis for our deliberations, I wish to confine myself today to making two observations of a general character on behalf of my government.

My first observation concerns the composition of the proposed International Development Authority. The United States proposal does not seem to provide for the composition of that body. Since that body is to be a vital instrument of the United Nations under the Security Council, it is highly important that this new body should be based on broad and democratic participation so as to include, like the Security Council, a substantial representation of small nations. This is not only in consonance with the spirit of the Charter but will create a wider sense of security throughout the world.

My second observation deals with the question of veto as applied to the field of atomic energy. My government is in full accord with the United States proposal that "there must be no veto to protect those who violated their solemn agreements not to develop or use atomic energy for destructive purposes."

CAPTAIN AVARO ALBERTO (BRAZIL):

The representative of Brazil has the honor to affirm the full approval of the Brazilian Delegation of the principles stated in the American plan for the international supervision of atomic energy.

As a whole, the American plan seems to us to sum up three important aspects of the question. In the first place, a new formation, a new configuration of international law through the establishment of an international authority responsible for the complete control of the sources and application of atomic energy in view of the necessity imposed by the conditions of war-time to prevent the use of this energy as a military instrument. Secondly, measures relating to the complete international control of means already existing as regards armaments and the production of atomic energy. Next, the legal definition of the new norms of penal law which flow from the international agreement proposed and the consequent imposition of penalties. All these propositions imply, of course, restrictions upon the sovereignty of states. Although applying collectively to all the states that accept it, it will thus be particularly applicable towards those who possess means of production of atomic energy. Bût this sacrifice made for the sake of the impositions from above of the common good will be compensated, for it can only add to the dignity of the patrimony of the nations which accept it.

DR. VALLARTA (MEXICO):

Mr. Chairman, in the name of the Mexican Delegation I wish to state first that explicit instructions have been received from my Government to approve the elimination of the veto power as far as the questions coming under the jurisdiction of the Atomic Energy Commission are concerned, as proposed by the Representative of the United States.

Further, I wish to mention that, in general, the proposals stated by Mr. Baruch in his speech of June 14th are acceptable to Mexico, although the question of managerial control of deposits of uranium ores would still require separate and careful consideration.

CHAIRMAN: As I stated, that concludes the list of speakers on this subject for this afternoon. At the next meeting we shall conclude this general discussion. Some Members have expressed their desire to consider what has been said this afternoon and make observations at the commencement of the next meeting. After that is done, I propose to bring up the question of procedure which was postponed until the next meeting, and then I propose to do what I indicated earlier, to put before the Commission working plans to see what area of agreement between us can be reached, and also to consider plans for the establishment of necessary committees to carry out the principles upon which we can agree. I think it is essential to do that so that the next meeting should conclude by saying the Commission is ready to get down to detailed work.

The Russian Proposal for International Control

. . . presented by *Andrej Gromyko*

Mr. President, the Commission for the Control of Atomic Energy, created in accordance with the decision of the Moscow Conference of the Foreign Ministers of the Three Powers and with the decision of the first session of the General Assembly, must proceed to the practical realization of the task set before it. The significance of these tasks and consequently, of the activities of the Commission, are determined by the significance of the very discovery, and is doubtless only a foretaste of still greater conquests of science in this field in the future, and it emphasizes the great importance of the tasks of this Commission and therefore of the activities of this Commission. As a result of developments in the last few years, circumstances have brought it about that one of the most important discoveries of humanity has found its application at the outset in a particular form of weapon, the atomic bomb. However, although, up to the present time, this use of atomic energy is the only known form for its practical application, it is the general opinion that humanity stands at the threshold of a wide application of atomic energy for peaceful purposes; for the good of the peoples as a means of raising their standards of welfare and their living conditions; for the good of and with a view to the development of science and culture.

There are thus two possible ways in which atomic discoveries can be used. One way is the use of these discoveries for the purposes of producing means of mass destruction. The other way is the use of this discovery for the welfare of humanity.

The paradox of the situation lies in the fact that it is the first way that has been studied most and most applied in practice. The second way has been studied and practically applied less. However, this circumstance does not diminish the importance of the tasks which lie ahead of the Atomic Commission, but, on the contrary, emphasizes still further in a high degree the meaning of these tasks from the point of view of the reinforcement of peace between the peoples. There can be no active and effective system of peace if the discovery relating to the ways of using atomic energy is not placed in the service of humanity and is not applied to peaceful purposes only. The use of such a discovery only for the purposes of raising the welfare of the peoples and widening of their scientific and cultural horizons will help to strengthen confidence between the countries and friendly relations between them.

On the other hand, if we continue to use these discoveries for the production of weapons of mass destruction we may intensify mistrust between states and keep the peoples of the world in continual anxiety and mistrust. Such a position would work against the aspirations of the peace-loving peoples who are thirsting for the establishment of a solid peace and who are making every effort to insure that their aspirations shall be transformed into reality.

As one of the first measures to be carried out, in order to carry out the decision of the General Assembly of the 24th of January, the Soviet Delegation proposes a study of the question of the conclusion of international agreements forbidding the production and use of weapons based upon the use of atomic energy for the purposes of mass destruction. The purpose of such an agreement should be to forbid the production and use of atomic weapons, the destruction of existing stocks of atomic weapons, and the punishment of all activities undertaken with a view to the violation of such agreements. The elaboration and conclusion of such agreements would be, in the opinion of the Soviet Delegation, only one of the primordial measures which must be taken to prevent the use of atomic energy to harm humanity. It should be followed by other measures designed to introduce means of assuring a strict supervision of the observance of undertakings entered into, the conclusion in connection with the above-mentioned agreements, the setting up of a system of supervision and control to see that the conventions and agreements are observed, and measures concerning sanctions against unlawful use of atomic energy.

The public opinion of the whole of the civilized world has already condemned the use in war of suffocating, poisonous, and other similar gases, and the use of liquids and substances of the same character, as also bacteriological weapons, and have concluded agreements forbidding the use of such weapons. For this purpose the necessity of concluding agreement forbidding the production and use of atomic weapons is even more obvious.

Such a convention would correspond in a high degree also, to the aspirations of the peoples of the whole world. The conclusion and elaboration of such an agreement and such a system of measures to insure the strict observance of the clauses of the agreements, the establishment of a system of control to see that the obligations contained in the agreements were observed and the establishment of sanctions against those who violate the agreements, all this, in the opinion of the Soviet Delegation, would constitute an important step in advance on the way of carrying out the tasks laid upon the Atomic Energy Commission. It would also fully correspond to the aspirations and the dictates of common sense of the whole of progressive humanity. The need for its acceptance by states of the obligation not to produce or use atomic weapons is dictated by the fact that the character of the atomic weapon is such that its application would mean untold misery to the whole of the peaceful population of the countries concerned.

The results of the use of this weapon are incompatible with the generally accepted rules and the ideas reinforced by the common sense of humanity over a period of many centuries, regarding the rules for the conduct of war which lay down that innocent civilian population should not be destroyed. The situation, as it exists at the present time, created by the discovery of the means of applying atomic energy and the use of these means for the production of atomic weapons, excludes the possibility of normal scientific cooperation between the states of the world.

One of the fundamental elements of the existing situation is characterized by the absence of any kind of limit to the production and application of atomic weapons. These elements are important considerations, and only strengthen the suspicion existing between countries and worsen the relations between them, calling forth political instability. It is clear that a continuation of this situation is likely to bring only negative results for the peace of the world.

Besides this, the continuation of the existing situation would mean that the most recent scientific attainments in this field could not constitute a basis for joint scientific efforts among the countries, directed towards the discovery and the perfection of methods of using atomic energy for peaceful purposes. From this there follows only one correct conclusion, namely, that it is indispensible that **there should be an exchange of scientific information between countries and that it is indispensible that there should be joint scientific efforts directed towards a broadening of the possibilities of the use of atomic energy only in the interests of the raising of the material welfare of he people and in the deveopment of science and culture.** The success of the work of this Commission will be determined in a large

measure by the extent to which it solves this important task.

The proposal for a wide exchange of scientific information is timely because it arises from the fact that such scientific discoveries as the discovery of methods of using atomic energy cannot remain for an indefinite time the property of any one country or any group of countries; inevitably, it becomes the property of many countries. This confirms the necessity of a wide exchange of scientific information upon the problem before us and the necessity of elaborating measures in this field, including organizational methods.

I have already stated Mr. Chairman, the general position as regards the task and character and the activities of the commission for the control of atomic energy. In the development of this general position, I would wish, upon the recommendation of my government, to lay before the commission **two concrete proposals which in the opinion of the Soviet Government may constitute a basis for the adoption by the commission of a recommendation to the Security Council** and thus play an important role in the task of strengthening the peace.

The proposals are as follows. The first one concerns the conclusion of an international agreement for the outlawing of the production and application of a weapon based upon the use of atomic energy for the purposes of mass destruction. The second concerns an organization of the work of the commission for the control of atomic energy. I will read the text of the first proposal.

Draft International Agreement to forbid the production and use of weapons based upon the use of atomic energy for the purposes of mass destruction. There follows after this a list of the signatory states, and the text continues: "Deeply aware of the extreme importance of the great scientific discoveries connected with the splitting of the atom and with a view to the use of atomic energy for the purposes of raising the welfare and standard of life of the peoples of the world, and also for the development of culture and science for the good of humanity; unanimously desiring universal cooperation as wide as possible for the use of all people of scientific discoveries in the field of atomic energy, for the improvement of the conditions of the life of the peoples of the whole world, the raising of their standard of welfare and further progress of human culture; taking account clearly of the fact that the great scientific discoveries in the field of atomic energy, contain a great danger first and foremost for the peaceful towns and civilian populations in case such a discovery were used as a means of applying an atomic weapon for the purposes of mass destruction; taking note also of the great importance of the fact that through international agreements, the use in time of war of suffocating, poisonous and other similar gases and also similar liquids, substances and processes, and also bacteriological methods have already been outlawed by common accord between the civilized peoples; and considering that the international outlawry of the use of the atomic weapon for mass destruction would correspond in still greater measure to the aspirations and the conscience of the peoples of the whole world; animated by an intense desire to remove the threat of the use of these scientific discoveries for the harm of humanity and against the interests of humanity; the high contracting parties decided to conclude an agreement to forbid the production and use of a weapon based upon the use of atomic energy, and for this purpose, appointed as their plenipotentiaries"—and here the list of plenipotentiaries will follow, whose credentials are found to be in due form—"agree as follows.

ARTICLE 1: **The high contracting parties solemnly declare that they will forbid the production and use of a weapon based upon the use of atomic energy, and with this in view, take upon themselves the following obligations:**

(a) Not to use, in any circumstances, an atomic weapon;

(b) To forbid the production and keeping of a weapon based upon the use of atomic energy;

(c) To destroy within a period of three months from the entry into force of this agreement all stocks of atomic energy weapons whether in a finished or semi-finished condition.

ARTICLE 2: **The high contracting parties declare that any violation of Article 1 of this agreement shall constitute a serious crime against humanity.**

ARTICLE 3: **The high contracting parties, within six months of the entry into force of the present agreement, shall pass legislation providing severe punishment for the violation of the terms of this agreement.**

ARTICLE 4: The present agreement shall be of indefinite duration.

ARTICLE 5: The present agreement is open for signature to all States whether or not they are Members of the United Nations.

ARTICLE 6: The present agreement shall come into force after approval by the Security Council, and after ratification by half the signature States, including all States Members of the United Nations, as under Article 23 of the Charter. The ratifications shall be placed for safe keeping in the hands of the Secretary-General of the United Nations.

ARTICLE 7: After the entry into force of the present agreement, it shall be an obligation upon all States whether Members or not of the United Nations.

ARTICLE 8: The present agreement of which the Russian, Chinese, French, English and Spanish texts shall be authentic, is drawn up in one copy and will be in the safe keeping of the Secretary-General of the United Nations. The Secretary-General shall communicate to all signatories a duly certified copy thereof.

I would like now to read the text of the second proposal. It concerns the organization of the work of the Commission for the control of atomic energy. Basing ourselves upon the decision of the General Assembly of the 24th of January, 1946, concerning the setting up of a Commission for the study of problems connected with the discovery of atomic energy and other related questions, and in particular upon Article 5 of this decision, stating the terms of reference of the Commission, the Soviet Delegation considers it necessary to make the following proposals concerning the plan of the organization of the work of the Commission for the initial period of its activity.

1. The setting up of committees of the Commission, pursuing the aims indicated in the decision of the General Assembly to "proceed with the utmost dispatch and inquire into all phases of the problem and make such recommendations from time to time with respect to that as it finds possible."

In connection with this item, it seems quite necessary to establish two committees which as auxiliary organs of the Commission would be responsible for a general study of the problem of atomic energy and the elaboration of recommendations which the Commission might make for the carrying out of the decision of the General Assembly and other organs of the United Nations.

It is proposed that there should be set up two committees, the first a committee for the exchange of scientific information. This committee would be set up for the purpose of studying point (a) of Article 5 of the decision of the General Assembly of the 24th of January, 1946. Among the tasks of this committee would be that of elaborating recommendations concerning practical measures for the organization of the exchange of information, (1) concerning the contents of scientific discoveries connected with the splitting of the atom and other discoveries connected with the obtaining and use of atomic energy, and

(2) concerning the technology and the organization of technological processes for obtaining and using atomic energy. (3) Concerning the organization and method of industrial production of atomic energy and the use of such energy. (4) Concerning forms, sources, and the location of raw materials necessary for obtaining atomic energy.

I come now to the second proposed committee whose task would be to prevent the use of atomic energy for the harm of humanity. This committee should be set up in order to attain the aims set forth in points (b), (c), and (d) of Article 5 of the decision of the General Assembly. **The task of this committee would be to prepare recommendations on the following subjects:**

1. The preparation of a draft international agreement for the outlawing of weapons based upon the use of atomic energy and forbidding the production and use of such weapons and all similar forms of weapons destined for mass destruction.

2. The elaboration and creation of methods to forbid the production of weapons based upon the use of atomic energy and to prevent the use of atomic weapons and all other similar weapons of mass destruction.

3. Measures, systems and organizations, of control in the use of atomic energy to insure the observance of the conditions above-mentioned in the international agreement for the outlawing of atomic weapons.

4. The elaboration of a system of sanctions for application against the unlawful use of atomic energy.

Part 2: The composition of the committees. Each committee would be composed of one representative of each state represented in the Commission. Each representative may have advisors.

3. Rules of procedure of the committees. The rules of procedure of committees shall be drawn up by the Commission.

Like the proposal for the conclusion of the agreement, these proposals which concern the organization of the work of the Commission are a practical means of advancing at the present time. The convention would be a concrete and important step forward in the direction of setting up an effective system of control of atomic energy. This measure would have an immense moral and political significance and might strengthen the political stability in the world and the friendly relations between the peoples. The creation of the two committees that I have proposed with the tasks as I define them, would mean the adoption of a concrete plan of work of the Commission in the initial stages of its activities and would at the same time mean the adoption of the necessary organizational forms for the carrying out of its work which would enable it to proceed quickly in the proposals of the broad exchange of scientific information and on questions related to the prevention of the use of atomic energy for the harm of humanity. The activity of the Commission for the control of atomic energy can lead to the desired result only if it is in full conformity with the principles of the Charter of the United Nations which are at the basis of the activity of the Security Council because the Commission is an organ of this Organization, working under the direction of the Security Council.

Efforts made to undermine the activity of the Security Council, including efforts directed to undermine the unanimity of the Members of the Security Council, upon questions of substance are incompatible with the interests of the United Nations created by the international organization for the preservation of peace and security. Such attempts should be resisted. I considered it necessary to make this statement in order that from the very beginning of the work of our Commission I might make clear the position of the Soviet Government as regards the question of the character and basis of the work of the Commission upon the question of the preparation of its recommendations as regards measures of control of atomic energy placed before the Security Council.

In conclusion, I wish to say that in this statement I aimed chiefly at underlining the extreme importance to be attributed to the conclusion of the above mentioned agreement for the outlawry of the production and use of atomic weapons. The conclusion of such an agreement would constitute an important practical step in the direction of fulfilling the task which lies before the Commission.

The American Proposal . . .

Continued from page 5

Authority is established. **Purely national authorities for control and development of atomic energy should to the extent necessary for the effective operation of the Authority be subordinate to it.** This is neither an endorsement nor a disapproval of the creation of national authorities. The Commission should evolve a clear demarcation of the scope of duties and responsibilities of such national authorities.

And now I end, I have submitted an outline for present discussion. Our consideration will be broadened by the criticism of the United States proposals and by the plans of the other nations, which, it is to be hoped, will be submitted at their earliest convenience. I and my associates of the United States Delegation will make available to each member of this body books and pamphlets, including the Acheson-Lilienthal report, recently made by the United States Department of State, and the McMahon Committee Monograph No. 1 entitled "Essential Information on Atomic Energy" relating to the McMahon Bill recently passed by the United States Senate, which may prove of value in assessing the situation.

All of us are consecrated to making an end of gloom and hopelessness. It will not be an easy job. The way is long and thorny, but supremely worth traveling. All of us want to stand erect, with our faces to the sun, instead of being forced to burrow into the earth like rats.

The pattern of salvation must be worked out by all for all.

The light at the end of the tunnel is dim, but our path seems to grow brighter as we actually begin our journey. We cannot yet light the way to the end. However, we hope the suggestions of my government will be illuminating.

Let us keep in mind the exhortation of Abraham Lincoln, whose words, uttered at a moment of shattering national peril, form a complete text for our deliberation. I quote, paraphrasing slightly:

"We cannot escape history. We of this meeting will be remembered in spite of ourselves. No personal significance or insignificance can spare one or another of us. The fiery trial through which we are passing will light us down in honor or dishonor to the latest generation.

"We say we are for Peace. The world will not forget that we say this. We know how to save Peace. The world knows that we do. We, even we here, hold the power and have the responsibility.

"We shall nobly save, or meanly lose, the last, best hope of earth. The way is plain, peaceful, generous, just—a way which, if followed, the world will forever applaud."

A Beginning for Sanity

. . . . . *Norman Cousins and Thomas K. Finletter*

A Review of the Acheson-Lilienthal Report

It is almost a year since this government first learned it could make an atomic weapon. But during that time the making of a policy to deal with it has had nothing of the bristling urgency and determination that went into the making of the bomb. Instead of a bold, affirmative program whose dimensions bore some relationship to the size of the problem, America has exhibited a policy of drift, default, and delay. It is doubtful whether ever in our history there has been an uglier or more ominous frittering away of critically valuable time.

Why is time so valuable? Simply because each day brings us closer to the time when other nations, working entirely on their own and without benefit of our much-vaunted "secrets," will have their own atomic weapons. The moment that happens—and we are advised by competent nuclear physicists not to count on a time factor of more than two or three years—it may be too late to set up world controls under world law. The atomic armaments race now being fertilized will have been born and fully formed.

And an armaments race is an armaments race, whether in respect to atomic weapons, battleships, bullets, or bows-and-arrows. As the stockpiles of weapons mount, so do the provocations and the tensions—curiously though not surprisingly. And the final provocation almost magically coincides with the discovery by any one nation or coalition of nations that it has a decisive margin in armaments over the others.

But the American people today have pennies over their eyes—pennies that blot out the bright light of sanity, pennies that prevent them from recognizing issues that will determine whether any of us will be alive a few years from now. These pennies are the domestic squabbles that have become not only a national preoccupation but a national obsession.

There seems to be no perceptible resistance to the idea of relying upon an atomic armaments race for security, or to the dangers that are inherent in such a race. It may be that the job of world control over atomic weapons and all other weapons of mass destruction is too demanding for a nation that feels it is entitled to a respite after a war. It may be that we are interested only in jobs we can cut down to our own size. It may be that we are so fascinated with limited objectives, and with ingrained ideas of gradualism, that we may not understand the crucial need for a majestic awareness of the immediateness of the problem and a determination to come to grips with the seemingly impossible.

If this drift seems like madness, consider how the madness is multiplied in view of the new implications of atomic warfare. A bigger stockpile of bombs offers little or no security to a nation which is hit first, particularly since the first blow may be the conclusive blow. It may very well be that we have fought the last war in which it will be possible to retaliate after the first blow is struck. For a nation which, by its very nature as well as by its constitutional processes, will not indulge in blitzkrieg aggression, a superior stockpile of atomic bombs may actually represent an added margin of danger rather than of defense in that it increases the chances of that nation being hit first in order to get it out of the way. The only real protection for a democracy in an atomic age is an organized peace under world law—the type of peace that some of our statesmen say we cannot have because the American people are not yet ready to make whatever readjustments of sovereignty are necessary to bring it about.

CONSEQUENCES OF AN ARMAMENTS RACE

This reluctance of course ignores some fairly fundamental readjustments that will have to be made once the atomic race is on in earnest. Do the American people know that an atomic armaments race means more than the manufacture of atomic bombs? Do they know it inevitably means the redistribution of population, the decentralization of our cities, the dispersal of our industries? Do they know that every American will be directly affected, that the required controls will of necessity be in the hands of the military, that it is a real question whether free institutions as we understand them can be maintained under the pressure of such vast and complicated changes? Do they know, finally, that America may be only a very few years away from such a "readjustment" and that the plans are even now being drawn up for that purpose?

This is not a matter of the military deliberately plotting to seize control of the nation. What is happening is that our failure to create a sound policy for atomic energy and other weapons of mass destruction looking toward effective world control creates a vacuum which is automatically being filled by the military. No one would ever accuse General Eisenhower or General Marshall of plotting a military state; but a powerful momentum is being set up which will inevitably force the War Department to carry out the biggest and most complicated physical change-over of a nation in the world's history—with all that that implies in the way of political and social readjustment and control.

If we ask ourselves how it is that we now find ourselves in this difficult and dangerous situation; how it is that only one year after victory the crisis is as serious, perhaps even more serious, considering our present unawareness of the danger, than it was at any time during the war; if we ask ourselves these questions, we naturally look back to see whether we have made any errors which figured in bringing about this danger, and, if so, whether the same policy that was responsible for these errors is still in effect.

There can be little question that the first error may have been the biggest error. The first error was the atomic bombing of Hiroshima. Not the making of the atomic bomb; that we were forced to do out of sheer national preservation, for the enemy was working on atomic weapons as well. It was what we did with the atomic bomb after we made it that was a mountainous blunder.

THE SCIENTISTS SPEAK

In making such a statement, we of course realize that it is highly volatile and requires full support and documentation. In creating a proper perspective for such substantiation, we refer to a report turned in to the War Department on June 11, 1945—one month before the New Mexico test, two months before Hiroshima. The report was made by a Committee on Social and Political Implications consisting of three physicists, three chemists, and one biologist under the chairmanship of Professor James Franck, of the University of Chicago.* This report, not made public by the War Department at the time, is one of the most important American documents of recent years—even though it is virtually unknown to the American people. It is, in effect, a declaration of conscience and responsibility by scientists—a declaration that their first duty was to the general welfare, that they did not propose to stand aside in parched detachment while the products of their research were applied.

"In the past," they wrote, "scientists could disclaim direct responsibility for the

This is condensed from an article in the June 15 issue of The Saturday Review of Literature. It is reprinted with the permission of the authors.

* First published in the Bulletin v. 1 No. 10.

use to which mankind had put their disinterested discoveries. We now feel compelled to take a more active stand because the success which we have achieved in the development of nuclear power is fraught with infinitely greater dangers than were all the inventions of the past. All of us, familiar with the present state of nucleonics, live with the vision before our eyes of sudden destruction visited on our own country, of a Pearl Harbor disaster repeated a thousand-fold magnification in every one of our major cities."

Soberly, and with great simplicity, they went on to show why no defense could be devised to offer *adequate* protection against a surprise atomic attack, and why only *adequate* international political organization of the world could offer any hope of security. They demonstrated why there were actually no "secrets" that other nations could not develop for themselves based on the actual knowledge of nucleonics known to exist in scientific laboratories throughout the world, and that all we had was a head start of perhaps a few short years.

They explained the peculiar vulnerability of America to atomic attack; why our densely populated metropolitan districts and our concentrated industries could be destroyed by instant and synchronized sabotage, if not by overhead attack. They explained why a quantitative advantage in atomic bombs was only an illusory advantage. "We are in a less favorable position than nations which are either now more diffusely populated and whose industries are more scattered, or whose governments have unlimited power over the movement of population and the location of industrial plants. . . . Russia and China are the only great nations at present which could survive a nuclear attack."

Because of all this, the report said, it was of critical importance that the bomb not be introduced in a way that would jeopardize America's long-range security, however great the apparent short-range advantages. A surprise attack by us with this new weapon—without any advance demonstration and without any ultimatum —involved much more than local military considerations. It required a political decision on the highest level.

Taking all this into account, the report recommended that the new weapon be demonstrated before the world, to be witnessed by representatives of the United Nations. The test bombing would be held on a barren island with appropriate safeguards.

What was happening was that the scientists were looking ahead, bearing in mind that the war with Germany was over and that we were already closing in for the kill in Japan; looking ahead and trying to anticipate the nature of the problem of world control of atomic energy after the war was over; looking ahead and trying to establish a sound basis for international agreement creating reliable safeguards.

"The best possible atmosphere for the achievement of an international agreement could be achieved if America could say to the world: 'You see what sort of weapon we had but did not use. We are ready to renounce its use in the future if other nations join us in this renunciation and agree to the establishment of an efficient international control.'

"After such a demonstration, the weapon might perhaps be used against Japan if the sanction of the United Nations (and of public opinion at home) were obtained, perhaps after a preliminary ultimatum to Japan to surrender or at least to evacuate certain regions as an alternative to their total destruction.

"This may sound fantastic, but in nuclear weapons we have something entirely new in order of magnitude of destructive power, and if we want to capitalize fully on the advantage their possession gives us, we must use new and imaginative methods."

WHY WAS THE BOMB USED?

Summing up, the scientists expressed their conviction that a unilateral approach to the dropping of the bomb, even apart from moral considerations, however overwhelming, would almost inevitably result in unilateral action by other nations. And unilateralism in an atomic age was not merely a problem but a fatal disease. We would be undermining a possible common ground upon which common controls might later be built. As a corollary, we would be destroying whatever stand we might later decide to take on outlawing the use of atomic weapons in warfare. It would be naive to expect other nations to take such a plea seriously in view of our own lack of reticence in dropping the bomb when the war was on the verge of being won without it.

Why, then, did we drop it? Or, assuming that the use of the bomb was justified, why did we not demonstrate its power in a test under the auspices of the UN, on the basis of which an ultimatum would be issued to Japan—transferring the burden of responsibility to the Japanese themselves?

Whatever the answer, one thing seems likely: There was not enough time between July 16, when we knew at New Mexico that the bomb would work, and August 8, the Russian deadline date, for us to have set up the very complicated machinery of a test atomic bombing involving time-consuming problems of area preparations; invitations and arrangements for observers (the probability being that the transportation to the South Pacific would in itself exceed the time limit); issuance of an ultimatum and the conditions of fulfillment, even if a reply limit was set at only forty-eight hours or less—just to mention a few.

No; any test would have been impossible if the purpose was to knock Japan out before Russia came in—or at least before Russia could make anything other than a token of participation prior to a Japanese collapse.

It may be argued that this decision was justified, that it was a legitimate exercise of power politics in a rough-and-tumble world, that we thereby avoided a struggle for authority in Japan similar to what we have experienced in Germany and Italy, that unless we came out of the war with a decisive balance of power over Russia, we would be in no position to checkmate Russian expansion.

There is a dangerous plausibility here —a plausibility as inseparable from the war system of sovereign nations as armaments are from armament races. It is the plausibility of power politics, of action leading to reaction, reaction leading to counter-reaction, and counter-reaction leading to war; of competitive systems of security rather than of workable world organization. It is a plausibility that rests on the flat assumption that war with Russia is inevitable, and that we should fight it at a time and under terms advantageous to us.

Such "plausibilities" are rejected by those who feel that the big job is to avert the next war, rather than to win it—even assuming that the next war will be worth winning, a somewhat dubious proposition. And they see no way to avert the next war other than through a world organization having the power to back up its decisions by law and relying upon preponderant force as needed. Such an organization would attempt to dispose of the fear-begetting-fear, provocation-begetting-provocation cycle; and to substitute in its place a central authority from which no member could withdraw or secede under any circumstances. It would automatically deprive potential aggressors of their traditional excuse for aggression —namely, their own encirclement and insecurity—and be strong enough to deal with them should a real threat arise.

It is possible, perhaps probable, that at the start not all nations would be willing to join such an authority, but so long as the overwhelming majority is willing to establish it, it will only be a matter of time before the others will find it impossible to remain outside. But assuming that any nation continues to stand aloof, the question for the rest of the world is whether that nation represents more of a threat outside a system of world law than it does inside world anarchy.

Meanwhile, no such world law exists, and the United States, which is in the best position—perhaps it is an obligatory position—to make the initial proposals looking toward the development of the United Nations into an authority with responsible and adequate power—the United States is making no such proposals and seems content to see the UN—born so auspiciously and with such high hope—grow weaker day by day for want of nourishing authority to deal with the very questions that give it its only reason for being. True, David had only a slingshot, but the UN lacks even that in a world of pushbutton atomic warfare. There are no world police, no world law, no world agencies whose decisions are binding, no authority over the international instruments of death.

THE LILIENTHAL REPORT

This is the general background against which the Acheson-Lilienthal "Report on the International Control of Atomic Energy" must be viewed, for the problem of atomic energy is synonymous with the problem of world peace. It is therefore significant that the Report is even more concerned with world policy than with American policy; its recommendations would have to be effective on a world scale if they are to be effective at all.

Let us say forthwith that this Report offers real encouragement in an otherwise discouraging picture. More than that: it is a refreshing display of sanity at a time when the products of cerebral activity in high station seem severely rationed. The commercial publishers are to be commended for making it available for general distribution at low cost.

The Board of Consultants which prepared this report was a diverse group of men, whether in terms of professional background or personality. Two members of the group were businessmen; one was a physicist, one a chemist, one a government administrator. One trait, however, they all had in common: They were strongly individualistic and not generally addicted to the usual type of committee work or overly fond of committee techniques.

HOW THE COMMITTEE FUNCTIONED

If it is asked how such a group managed to get together on any report requiring strength, the answer may be that their very individuality and their abhorrence of the traditional committee ineptitude made them determine at the start to bypass all the old committee devices resulting in compromise rather than in a direct, bold approach to a problem. This is no inference on our part; it is based on several conversations with one of the consultants.

"At the very first meeting," he said, "the group agreed the subject was too important to be subjected to the hazards of the push-and-pull of the committee approach. And so, even before we studied the problem of atomic energy, we studied committee techniques — what the reasons were which made the committee system fail so often or come up so frequently with sterile compromises. It was a fascinating discussion we had that day—on semantics, dialectics, the art of persuasion, collaborative effort.

"It seemed to be fairly well agreed that most committees break down because many members come to their job with fully formed conclusions, having almost property rights in their own ideas, and spend all their time proposing and exhorting rather than listening and considering. It was inevitable that the old system would make for a clash of personalities even more than for a clash of ideas.

"Our first joint decision, then, was to liberate all our discussions from idea-possessiveness. No point would be argued down; we agreed that we would attack the problem inductively, working from the ground up, assembling all facts pertinent to the problem as a basis for conclusions, implied or implicit. We agreed that all questions coming up were to be considered as being brought up by the group as a whole rather than by any single member. If a member had an objection to any one point, it was to be regarded as something that troubled the group as a whole.

"We agreed, too, that we were not going to issue a watered-down report just for the sake of coming out with *a* report. We were not going to get into the usual type of barter system, trading off one pet idea against another, getting into committee 'deals' just for the sake of carrying off individual honors. We agreed that we would issue five reports if any of us felt that the group report lacked directness and honesty.

"You might call this a sort of search for individual and group objectivity. At the least, it meant that each of us was pledged to attempt to emancipate himself from the tyranny of his own ego. We were trying to create a collective wisdom.

"At first, it was hard to do this. Every now and then the discussions would break down just because one of us found it difficult to get used to the science of joint thinking and would lapse into the role of prosecutor or defendant. But little by little, the preconceived ideas dropped out; the clash of conflicting personalities became less and less apparent.

"We virtually lived together during the entire two months. When a point came up that could only be settled by first-hand observation at one of the atomic centers or at one of the laboratories—wherever it was—the entire group would bundle itself up and make the trip forthwith. Some of our best discussions, in fact, were on long plane trips. We found the air a particularly appropriate place to discuss problems that were literally out of this world."

It may seem that there is nothing very remarkable about all this and that such an approach should be taken for granted. Yet anyone familiar with the workings of the average government committee, with its sporadic meetings and erratic attendance; its half-formed ideas and incomplete discussions; the intrusion of personalities and personal considerations; and, finally, the habit of turning over all the undigested material to a secretary or counsel, who prepares for the chairman's signature a report which seems primarily designed to avoid offending any of the members of the committee; anyone who has has been through this will appreciate how really remarkable and worthy of emulation were the Lilienthal committee's techniques.

At the very least, these techniques were responsible for a report representing a piece of public service of the first order. Bear in mind that the Report was offered not as a formal statement of suggested policy but as a basis for public discussion and consideration. The consultants emphasize in an introduction that the Report is offered "not as a final plan, but as a place to begin, a foundation on which to build. Many questions that at later stages should and must be asked we have not touched upon at all."

On one count alone—its statement of the problem—the Report deserves to be read by every literate American. It begins by describing what the next war would mean to the United States. It makes the categorical assumption that there can be no military defense against atomic weapons. It asks Americans to recognize that our monopoly in atomic bombs will be short-lived, that within a very few years we can expect nuclear fission to figure in the armaments of almost all other major nations. It emphasizes the disadvantage of the United States with regard to a surprise attack. It sees no prospect of security against atomic warfare in a system based on international agreements relying on inspection and "similar police-like methods." It has little hope in outlawing the bomb by voluntary methods; this would place an "enormous pressure upon national good faith." It warns of the dangers of "national rivalries in the development of atomic energy readily convertible to destructive purposes."

The hard-hitting conclusion is that atomic energy is too dangerous a force

to be owned, operated, or developed by any sovereign nation.

This leads automatically to the next conclusion: atomic energy must be internationalized. But what type of internationalization? The United Nations? If so, do the United Nations have the necessary structural powers? What about nations which are outside the UN? If not, to what agency would any system of control be responsible?

All these questions were further complicated by several conditions which the consultants were apparently directed to take into account. One such condition was that the State Department was anxious to assure Congress that any plan of international control, should it fail, would still enable the United States to retain its "relatively secure position, compared to any other nation." Another such condition, specified in Mr. Acheson's introductory letter of transmittal, was that the United States would still be allowed to manufacture its atomic bombs after a plan of international control was put into operation, although "at some stage" such discontinuance would probably be required.

SOME CRITICISMS OF THE REPORT

Now these are of course impossible conditions. It is internationalization with a "but." It precludes any true internationalization of atomic energy or anything else. It might be possible to meet these conditions in such a way as to provide the appearance of internationalization, but the substance would be that of a most-favored-nation treaty—for the United States. All the nations in the world would be asked to surrender their sovereignty in the mining, processing, and manufacture of fissionable materials, but the United States would still be permitted to stockpile its own atomic bombs. Appealing and reassuring as this may sound in the Senate of the United States, it is as myopic as it is impractical. Are we to suppose that other nations would ever agree to such conditions? Or that, if they did agree, that they would not do everything possible to give themselves the same advantage that we feel our own national interests demand? It seems clear that any plan of control would be no more than a thin facade behind which all the old struggles for power—in today's terms, atomic power—would move inexorably to a climax.

Such conditions mean that this government, after two world wars, is still holding back on any measures of world organization with any real starch or workability. We are still unwilling to take the plunge, still unwilling to recognize that the central organization must be stronger than any of its members, still unwilling to back up our professions of international collaboration with the necessary authority.

The Lilienthal Report is obedient in that it does not specifically set aside the two conditions, yet the consultants do a very neat job of dramatizing the utter absurdity of allowing a large area of unilateralism to exist inside any world authority.

For it is a world authority that the consultants propose—a world Atomic Development Authority with unquestioned jurisdiction and power over world supplies and stocks of uranium and thorium—the only raw materials which, so far as scientists now know or can envision for the reasonable future, can be used for the release of atomic energy. The agency will have supreme authority over everything connected with fissionable materials —mining, manufacturing, inspecting, research, licensing, price-fixing, and sales.

Certainly the Report has flaws. We fail to see how a world authority could have the power called for in the field of atomic energy without a world organization having supra-national powers. We fail to see how it would be possible to operate what is in effect an agency of world government without a world government to back it up. We fail to see how sovereignty could be abrogated in one area, however critical, while all the other areas continued to operate under the old and incendiary sovereignties. We fail to see how it would be possible to separate the control of atomic energy from the control of war. We fail to see how it would be possible to set up yardsticks by which fissionable materials could be distributed equitably—in a world of grasping and competitive sovereignties. Would nations without uranium ores have purchasing rights under the plan?

By inference, at least, the Report itself admits these flaws. But its job was strictly limited to the question of atomic energy; and it perhaps had a right to take for granted that an adequate world organization would be developed out of the United Nations. What, otherwise, would be the source of authority? To what source would nations or individuals appeal for legitimate redress? Suppose one nation or coalition of nations walked out of the plan—for good or bad reasons? What action would be taken? Under what laws? In short, could or should the plan be operative without the machinery of justice and the power of justice?

The Report virtually admits, too, that the plan could not prevent an atomic war. The impression is clear that if a war broke out, individual nations would seize the ADA installations and facilities, which, together with its own plants working with denatured fissionable materials, could be used as the basis for an all-out production effort. So that within a number of months, atomic weapons might be in general use. But here, too, it must be remembered that the committee was given no authority to set up a world organization that could keep the peace.

In connection with this, however, Mr. Lilienthal has pointed out that the plan could be effective in reducing the chances of surprise attack—the biggest single threat and dread of atomic warfare. There is a definite relationship, he adds, between reducing the chances of war, since the fear of surprise attack in an atomic armaments race might in itself be sufficient to bring on the next war.

CONCLUSIONS.

Despite all flaws, and despite conditions of unilateralism favoring the United States which the committee had to take into account, we believe it of the utmost importance that the Report be used as the basis for immediate discussion and action by this country. It provides a valid occasion for the United States to propose amendments to the United Nations Charter setting up the world atomic authority. Of even greater significance, it puts the challenge squarely up to the Administration to propose amendments to strengthen the UN itself to whatever degree is needed to make the ADA operable.

But if the ADA is set up without respect to basic and dangerous weaknesses within the structure of UN, then one of two things may happen as soon as people discover the absurdity of marking out atomic energy alone for control in a world which has the right to develop other methods of warfare perhaps even more destructive —such as the diffusion of plague germs against which there may be no immunization defenses; and as soon as people discover that the ADA must rise or fall with the organization behind it. One thing that might happen would be a surging popular demand for immediate and sweeping changes in UN to make it equal to the job before it. The only other thing that could happen would be that the ADA, and the UN along with it, or rather behind it, would collapse in the most grotesque and tragic failure in history.

The most practicable way to avoid such a failure, and failure in this case is synonymous with war, is to work with fundamentals *now*, to dig right in and do the spade work *now*, to take on the seemingly impossible job of converting the United Nations into an organization invested with whatever power is necessary to keep the peace, *now*. And the best way to begin is by being sure that we, the American people, are willing to make the first proposals for a real pooling of sovereignty.

The Carnegie Draft Convention

. . . Legal Subcommittee, Carnegie Endowment for International Peace

George A. Finch, Chairman; Joseph P. Chamberlain, PercyE. Corbett, Malcolm W. Davis, Clyde Eagleton, Manley O. Hudson, Herbert L. May, James T. Shotwell, Edgar Turlington, Louis B. Sohn.

The Carnegie Endowment for International Peace is one of the most active private groups working on problems of atomic energy (see Bulletin Nos. 3 and 4). It has previously issued an important report on control of radioactive raw materials, which was reprinted in condensed form in No. 6 of the Bulletin.

Below, we reprint a Draft Convention on the control of atomic energy, prepared by the legal subcommittee of the Carnegie Endowment Committee on Atomic Energy, under the chairmanship of George A. Finch. This draft has to be compared with the plan outlined in the Acheson-Lilienthal report, which has since been embodied in the proposals made by Baruch to the UN Atomic Energy Commission, and with plans proposed by other private study groups such as the Chicago Draft Convention (Bulletin Nos. 8 and 12). We hope to be able to give a more detailed comparative analysis of the Carnegie plan in one of our future issues. In general, it gives less power and scope to the international agencies than does the official American plan or the Chicago Draft Convention, and leaves more freedom to national activities. Instead of outlawing atomic bombs altogether, it gives to the Security Council the right to authorize individual states to possess a certain number of bombs and to use them in aid of action for the maintenance of international peace and security. Ed.

The signatory States, desiring

to provide for all peoples security against the use of atomic weapons,

to assure to all peoples the advantages to be derived from the control of atomic energy and its use for peaceful purposes, and

to organize and direct the cooperation of international and national agencies for the achievement of these ends,

Agree to the following Convention:

CHAPTER I.

PRINCIPLES OF INTERNATIONAL LAW AND THEIR IMPLEMENTATION

ARTICLE 1. The signatory States declare the following to be principles of general international law:

(a) The production, the possession, and the use of atomic weapons are prohibited, except as authorized under Articles 2 and 4 of this Convention.

(b) The possession and the operation of plants which are exclusively suited for the production of atomic weapons are proribited, except as authorized under Article 2 of this Convention.

(c) The conduct of research and experimentation with respect to the military application of atomic energy is prohibited, except as authorized under Article 2 of this Convention.

(d) Each State has a duty to refrain from any violation of these prohibitions, and to take all the necessary legislative, administrative and police measures for the enforcement of these prohibitions within its territory.

ARTICLE 2. 1. For the maintenance of international peace and security in accordance with the provisions of the Charter of the United Nations and subject to such general regulations as may be adopted, the Security Council may give specific authorization to any signatory State

(a) to conduct, or to license the conduct of, research and experimentation with reference to the military application of atomic energy;

(b) to possess, to operate, or to license the operation of, plants which are exclusively suited for the production of atomic weapons;

(c) to produce, or to license the production of, atomic weapons; or

(d) to possess atomic weapons.

2. In aid of action under Chapter VII of the Charter of the United Nations, the Security Council may give specific authorization to any signatory State to use atomic weapons.

ARTICLE 3. A failure by any State to comply with the principles set forth in Article 1 may be found by the Security Council to be a threat to the peace, or a breach of the peace, and the Security Council may make recommendations or decide what measures shall be taken to maintain or restore international peace and security, in accordance with the provisions of Chapter VII of the Charter of the United Nations.

ARTICLE 4. Subject to the provisions of Article 51 of the Charter of the United Nations, the signatory States undertake to retaliate, immediately and with all the means at their disposal, against any State which resorts to the use of atomic weapons without a specific authorization of the Security Council.

CHAPTER II.

ORGANIZATION

A. International Atomic Energy Commission

ARTICLE 5. 1. An International Atomic Energy Commission is hereby established under the authority of the United Nations, to control the production, the distribution and the utilization of source materials[1] and of fissionable materials,[2] and to promote the utilization of atomic energy for peaceful purposes, as provided in this Convention.

2. The International Commission shall be composed of nine members, who shall serve for three-year terms, and who may be selected to succeed themselves.

3. Each State which is a permanent member of the Security Council shall select one member of the International Commission, and an alternate with power to act for the member when he is absent. Four members of the International Commission, and four alternates, shall be selected by the General Assembly. Vacancies shall be filled in the same manner as the original selection.

ARTICLE 6. 1. The International Commission shall adopt its own rules of procedure, including the method of selecting its President.

2. The Commission shall be so organized as to be able to function continuously, and the members of the Commission shall be bound, unless they are on leave or prevented from attending by illness or other serious reason duly explained to the President, to hold themselves permanently at the disposal of the Commission.

3. Each member of the International Commission shall have one vote.

4. Decisions of the International Commission shall be made by a majority of the members present and voting.

ARTICLE 7. 1. The International Commission shall establish a Board of Scientific and Technical Experts to act in an advisory capacity and to be consulted on scientific and technical matters.

2. The Board shall consist of fifteen members, of whom not more than two may be nationals of the same State.

3. The members of the Board shall be

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[1] As the term is used in this Convention, "source materials" include uranium, thorium and any other materials which the International Commission declares to be peculiarly essential to the production of fissionable materials.

[2] As the term is used in this Convention, "fissionable materials" include plutonium, uranium enriched in the isotope 235, any other material which the International Commission declares to be capable of releasing substantial quantities of energy through nuclear chain reaction of the material, and any other material artificially enriched by any of the foregoing. It does not include "source materials".

elected by the International Commission for six years and may be reelected; provided, however, that of the members elected at the first election, the terms of five members shall expire at the end of two years and the terms of five more members shall expire at the end of four years.

4. Before each election of the members of the Board, the International Commission shall consult competent scientific and technical bodies, national and international.

ARTICLE 8. 1. The International Commission may set up such committees and agencies, and it may maintain such offices, laboratories and plants, at it may deem necessary for the exercise of its powers under this Convention.

2. The International Commission may appoint its own staff, both technical and administrative.

3. The expenses of the International Commission shall be borne by the United Nations, in such manner as shall be decided by the General Assembly of the United Nations.

ARTICLE 9. 1. The International Commission shall posses full juridical personality in the territory of each of the signatory States and, in particular, it shall have capacity:

(a) to contract;

(b) to acquire and dispose of immovable and movable property;

(c) to conduct research and developmental and commercial activities; and

(d) to institute legal proceedings.

2. The International Commission shall have immunity from every form of judicial process.

3. The premises of the International Commission shall be inviolable; its property and assets shall be immune from seizure and from all interference by national authorities and shall be exempt from all taxation.

4. The members of the International Commission, their alternates, and the staff of the International Commission, when engaged on the business of the Commission, shall enjoy such privileges and immunities as are necessary for the independent exercise of their functions.

B. National Atomic Energy Commissions

ARTICLE 10. 1. Each signatory State agrees to establish a national atomic energy commission to regulate, subject to the control and supervision of the International Commission provided for in this Convention, all activities within its national territory connected with the production and utilization of source materials and of fissionable materials, and to facilitate the work of the International Commission within its territory.

2. Each national commission shall transmit to the International Commission monthly reports, promptly and in such form and detail as may be prescribed by the International Commission, concerning all activities within its national territory connected with the production, movement, and utilization of source materials and of fissionable materials.

3. The International Commission may request a national commission to supply any supplementary particulars of explanations in regard to its reports.

CHAPTER III.

GENERAL FUNCTIONS OF THE INTERNATIONAL COMMISSION

A. Research and Development

ARTICLE 11. 1. The International Commission shall establish programs of research and development to promote scientific and technical progress in the field of atomic energy, particularly with respect to

(a) nuclear processes;

(b) the theory and production of atomic energy;

(c) the utilization of fissionable and radioactive materials for medical, biological or health purposes;

(d) the utilization of fissionable and radioactive materials for industrial purposes; and

(e) the location and treatment of ores.

2. The International Commission may engage directly in such activities, and for this purpose it may maintain the laboratories and plants which it may deem to be required. Such laboratories and plants should, so far as may serve the purposes of the International Commission, be located in various countries and in different parts of the world.

3. Each signatory State agrees to permit the International Commission to maintain and operate such laboratories and plants in its territory, and to facilitate their use by the International Commission for research and developmental purposes.

4. The International Commission shall also encourage and lend aid to the conduct of national research and developmental activities by governmental and private agencies, and to this end it shall make availiable to them the appropriate quantities of fissionable materials and of radioactive byproducts.

B. Surveys

ARTICLE 12. 1. A general survey of deposits of source materials shall be conducted by the International Commission as soon as possible after its establishment. To facilitate such survey, each signatory State agrees to transmit to the International Commission, within three months after it inaugural meeting, all information in its possession with respect to the known deposits of source materials and the efforts being made to discover additional deposits.

2. The International Commission shall have power to conduct geological surveys within the territory of any State, for the purpose of ascertaining the existence, the location, and the content of deposits of source materials.

3. Each signatory State agrees to assist the International Commission in the conduct of such surveys, and to supply all relevant information which may be available, and to permit access for the purpose to any part of its territory by any means, including access by air.

C. Dissemination of Information

ARTICLE 13. 1. Each national commission shall assemble the basic scientific information and the related technical information available within the national territory with respect to the production and utilization of atomic energy, and it shall include such information in its monthly reports to the International Commission.

2. The International Commission shall arrange for the periodical publication of all information available to it, with respect to the production and utilization of atomic energy.

D. Economic and Social Uses of Atomic Energy

ARTICLE 14. In cooperation with the Economic and Social Council of the United Nations, the International Commission may initiate and conduct studies of the economic and social effects of the utilization of atomic energy, and it may make recommendations on this subject to the signatory States, to the General Assembly, and to any specialized agencies concerned.

E. Military Application of Atomic Energy

ARTICLE 15. 1. The International Commission shall from time to time consult with the Military Staff Committee of the Security Council, with reference to the activities of the Commission.

2. In cooperation with the Military Staff Committee of the Security Council, the International Commission may initiate and conduct studies with respect to the military application of atomic energy, and it may make recommendations on the subject to the Security Council.

F. Periodical Reports

ARTICLE 16. 1. The International Commission shall submit an annual report to the General Assembly and a quarterly report to the Security Council, concuring its activities under this Convention.

2. All such reports by the International Commission shall be published immediately.

3. Each signatory State agrees to give immediately full publicity within its territory to the reports of the International Commission.

G. Conduct of Inspections

ARTICLE 17. 1. The International Commission shall adopt general regulations concerning the conduct of the inspections provided for in this Convention, and the techniques to be employed.

2. Each signatory State agrees to issue to the officials of the International Commission such credentials as may be necessary for the carrying out of inspections.

3. Each national commission shall appoint one or more assessors who shall be constantly at the disposal of the International Commission for facilitating the work of its officials within the national territory. Assessors shall be entitled to accompany the officials of the International Commission on inspections within the national territory.

4. The officials of the International Commission shall not give orders to the local authorities. The assistance which may be needed from these authorities shall be requested through the intermediary of the assessors, who shall be provided with the necessary powers for this purpose.

5. Neither the International Commission nor its officials may make any disclosure of trade secrets revealed by an inspection, such as those relating to technical details of the production processes, production costs, profits, financial arrangements, and selling methods. The International Commission shall adopt regulations for hearing complaints concerning alleged disclosures.

CHAPTER IV.

MEASURE OF CONTROL

A. Mining

ARTICLE 18. 1. In agreement with the State in whose territory a deposit of source materials is located, the International Commission may acquire such deposit, and engage directly in mining it or license the mining of it under regulations for accounting and inspection and for purchase by the International Commission of all source materials produced.

2. The International Commission shall have power to inspect mines in the territory of any State, for the purpose of ascertaining the quantity and content of source materials which are being or may be extracted.

3. The International Commission shall provide for continuous inspection of all mining in each region in which significant deposits of source materials are known to exist, and it shall maintain a regional office there for this purpose.

4. Each signatory State agrees to facilitate the inspection by the International Commission of mines in its territory, and to see that no impediment is placed in the way of such inspection. To this end, each signatory State shall require operators of all mines within its territory to keep such records as the International Commission may prescribe, with respect to the reserves, extraction, stockpiles, movement and sales of source materials. These records shall be open to the International Commission.

B. Production of Concentrates of Source Materials

ARTICLE 19. 1. The International Commission may maintain, operate or license in the territory of any State with the agreement of that State, facilities and plants for the production or segregation of concentrates[3] of source materials.

2. Each signatory State agrees to permit the production of concentrates of source materials within its territory only by the International Commission, or by its national commission, or under a production license issued by its national commission, and in the last case to require compliance with the terms of the license.

3. The International Commission shall make for each country a yearly estimate of the quantity of concentrates of source materials needed to assure an adequate supply for peaceful uses and for such uses as have been authorized by the Security Council under Article 2 of this Convention, and it shall fix from time to time a maximum production quota for each State which possesses facilities or plants for the production of such concentrates, and shall provide for the international distribution of such concentrates for peaceful purposes.

4. Each signatory State agrees to restrict the total amount of the production of concentrates of source materials by its national commission or under license issued by its national commission to the maximum production quota assigned to it by the International Commission.

5. Each signatory State agrees to require each holder of a production license to sell all his output of concentrates of source materials to its national commission, and to establish severe penalties for any failure to comply with this requirement.

6. Each signatory State agrees to require its national commission and each holder of a production license to conform to the regulations adopted by the International Commission with respect to the storage and movement of concentrates of source materials.

ARTICLE 20. 1. The International Commission shall have power to inspect in the territory of any State any facilities or plants which are, or may be, adapted for the production of concentrates, for the purpose of ascertaining whether they are being used for the production of concentrates of source materials. Each signatory State agrees to facilitate such inspection in its territory, and to see that no impediment is placed in its way.

2. The International Commission shall assign one or more officials to each facility or plant used for the production of concentrates of source materials, and such officials shall be permitted to enquire into all activities of the facility or plant and to examine its books and records.

3. The International Commission shall make regulations for the storage and movement of source materials within a country.

4. Each national commission shall transmit to the International Commission monthly reports on the amounts of concentrates of source materials produced or acquired by it, and on its stockpiles of such concentrates.

ARTICLE 21. 1. A national commission may transfer concentrates of source materials only to the International Commission or, with the specific authorization of the International Commission, to a national commission of another State.

2. Whenever the amount of concentrates in the possession of a national commission exceeds the estimate of its needs made by the International Commission under paragraph 3 of Article 19, the national commission shall immediately transfer the excess amount to the International Commission.

3. After satisfying its own requirements and the requirements of private and governmental agencies engaged in research and developmental activities, the International Commission shall distribute the remaining concentrates of source materials in its possession among the national commissions in proportion to their needs as established in the yearly estimate made under paragraph 3 of Article 19.

4. The International Commission shall adopt detailed regulations for the execution of this Article.

C. Production of Fissionable Materials

ARTICLE 22. 1. The International Commission may maintain and operate, in the territory of any State with the agreement of that State, one or more plants for the production of fissionable materials from concenrates, or for the renaturing[4] of fissionable materials after they have been denatured.

2. Each signatory State agrees to prohibit the construction within its territory of plants designed to produce or renature fissionable materials, except by the International Commission or with its authorization. In giving such authorization, the International Commission may prescribe the general specifications for the construction of each plant.

[3] As the term is used in this Convention, "concentrates of source materials" include source materials in such concentration and in such form as the International Commission may by regulation determine from time to time.

[4] As the terms are used in this Convention, "denatured materials" include fissionable materials which have been rendered not readily convertible into explosive materials, and "renatured materials" include fissionable materials which have been reconevrted into materials readily usable for the manufacture of explosive materials. These terms are subject to definition from time to time by the International Commission.

3. Each signatory State agrees that all plants in its territory which are adapted for the production or renaturing of fissionable materials and which are not maintained and operated by the International Commission, shall be operated directly by its national commission.

4. The International Commission shall have power to inspect in the territory of any State any plants which are, or may be, adapted for the production or renaturing of fissionable materials, for the purpose of ascertaining whether these plants are being used for such production or renaturing. Each signatory State agrees to facilitate such inspection in its territory, and to see that no impediment is placed in its way.

ARTICLE 23. 1. The International Commission shall make a yearly estimate of the quantities of fissionable materials needed for peaceful uses and for such uses as have been authorized by the Security Council under Article 2 of this Convention, and it shall fix from time to time a maximum production quota for each national commission which possesses plants for the production of such materials.

2. Each signatory State agrees to restrict the total amount of the production of fissionable materials by its national commission to the maximum production quota assigned to it by the International Commission.

3. Except upon a specific authorization otherwise by the International Commission, each national commission shall denature as promptly as possible all fissionable materials produced in its plants, in accordance with regulations prescribed by the International Commission.

4. The International Commission shall assign one or more officials to each plant producing fissionable materials, and such officials shall be permitted to enquire into all activities of the plant and to examine its books and records. Upon request of the national commission, the International Commission may authorize such officials to take part in the operation of a plant and to give assistance in the conduct of the plant's activities.

5. Each national commission shall conform to the regulations adopted by the International Commission with respect to the storage and movement of fissionable materials.

6. Each national commission shall submit to the International Commission monthly reports on the amounts of fissionable materials produced and on the amounts and stages of development of stocks in its possession.

ARTICLE 24. 1. A national commission may transfer fissionable materials only to the International Commission or, with the specific authorization of the International Commission, to a national commission of another State.

2. Whenever the amount of fissionable materials in the possession of a national commission exceeds the estimate of its needs made by the International Commission under paragraph 1 of Article 23, the national commission shall immediately transfer the excess amount to the International Commission.

3. After satisfying its own requirements and the requirements of private and governmental agencies engaged in research and developmental activities, the International Commission shall distribute the remaining fissionable materials in its possession among the national commissions in proportion to their needs as established in the yearly estimate made under paragraph 1 of Article 23.

4. The International Commission shall adopt detailed regulations for the execution of Article 24.

D. Lease of Denatured Materials

ARTICLE 25. 1. A national commission may lease denatured fissionable materials to industrial establishments, under conditions to be prescribed by the International Commission. Monthly reports of all such leases shall be made by the national commissions to the International Commission.

2. The International Commission shall have power to inspect in the territory of any State any establishment which is engaged in the use of denatured fissionable materials. Each signatory State agrees to facilitate such inspection in its territory, and to see that no impediment is placed in its way.

E. Research and Development Activities

ARTICLE 26. 1. Each national commission shall make quarterly reports to the International Commission concerning the scope and character of the research and developmental activities carried on in the national territory by governmental or private agencies, with respect to the production and utilization of fissionable and radioactive materials.

2. The International Commission shall have power to inspect in the territory of any State any laboratories or plants for the purpose of ascertaining whether these laboratories or plants are engaged in such research or developmental activities. Each signatory State agrees to facilitate such inspection in its territory and to see that no impediment is placed in its way.

F. Production of Atomic Weapons

ARTICLE 27. 1. Where the Security Council has authorized a signatory State to possess, to operate, or to license the operation of, a plant exclusively suited for the production of atomic weapons, the International Commission shall assign one or more officials to such plant for the purpose of ascertaining whether the conditions set by the Security Council are being complied with. Such officials shall be permitted freely to enquire and examine into all activities of the plant and to examine its books and records.

2. The International Commission shall have power to inspect in the territory of any State any plants which are, or may be, adapted for the production of atomic weapons or parts of atomic weapons, for the purpose of ascertaining whether they are engaged in such production. Each signatory State agrees to facilitate such inspection in its territory, and to see that no impediment is placed in its way.

CHAPTER V.

PROCEDURE IN CASE OF INFRINGEMENT

A. Investigations

ARTICLE 28. 1. The International Commission, when it is informed by any State of an infringement of any of the provisions of this Convention, or when it has other reasons to suspect that an infringement has occurred or is about to occur, shall at once proceed to an investigation of the situation. To this end, it shall invite the State within the territory of which the alleged or suspected infringement has occurred, to supply explanations.

2. The International Commission may, if it is deemed necessary, conduct a special investigation on the spot, and each signatory State agrees to facilitate such an investigation in its territory, and to see that no impediment is placed in its way.

3. The International Commission shall as soon as possible submit a special report informing the Security Council of the alleged or suspected infringement, of the explanations supplied by the State concerned, and of the steps taken by the International Commission to investigate the situation. The International Commission may include in the special report its evaluation of the gravity of the situation, as well as its recommendations for action by the Security Council, under Chapter VII of the Charter of the United Nations.

4. Each such special report by the International Commission shall be immediately communicated to all the signatory States, and it shall be made public as soon as possible.

B. Provisional Measures

ARTICLE 29. Upon receipt of a notification that the International Commission is conducting an investigation with respect to an alleged or suspected infringement of the Convention, the signatory States undertake to suspend

(a) all export to the State concerned of source materials, of fissionable materials, and of machinery and appliances for the production of such materials;

(b) all transit through the territories under their jurisdiction of such materials, machinery and appliances destined for the State concerned; and

(c) all transport on board vessels or airplanes registered in their respective territories of such materials, machinery and appliances destined for the State concerned.

C. Special Quotas

ARTICLE 30. The International Commission may, when it has reached the conclusion that an infringement has occurred in the territory of any signatory State, proceed immediately to readjust the annual quotas assigned to any other signatory State under Articles 19 and 23 of this Convention.

D. Obstacles Offered by States Not Parties to the Convention

ARTICLE 31. The International Commission may at any time bring to the attention of the Security Council, by means of a special report, the existence within the territory of a State not a party to this Convention of conditions which seem to offer obstacles to the realization of the purposes of this Convention; it may also make recommendations for action by the Security Council under Chapter VII of the Charter of the United Nations.

CHAPTER VI.

TRANSITIONAL PROVISIONS

ARTICLE 32. A signatory State shall not be required to permit in its territory

(a) inspection of mines, under Article 18, and inspection of plants for the production of concentrates of source materials, under Article 20, until the International Commission has certified that it has completed the general survey provided for in Article 12;

(b) inspection of plants for the production or renaturing of fissionable materials, and of research and developmental activities, under Articles 22, 23, 25 and 26, until the International Commission has certified that it has established the quotas provided for in Article 23, and that the system of quotas and inspections provided for in Articles 19, 20 and 21 has functioned successfully for a period of (x) months;

(c) inspection of plants for the production of atomic weapons, under Article 27, until the International Commission has certified that the system of quotas and inspections provided for in Articles 22, 23, 24, 25 and 26 has functioned successfully for a period of (x) months;

ARTICLE 33. Each signatory State agrees to transmit to the International Commission all information it may possess

(a) with respect to the number, location and capacity of the plants within its territory adapted for the production of concentrates of source materials, and with respect to its stockpiles of such concentrates, within (x) months after the inaugural meeting of the International Commission;

(b) with respect to the number, location and capacity of the plants within its territory designed to produce or renature fissionable materials, and with respect to its stockpiles of such materials, within (x) months after the International Commission has issued the certificate referred to in Article 32 (a);

(c) with respect to technical methods of producing, denaturing and utilizing fissionable materials, within (x) months after the International Commission has issued the certificate referred to in Article 32(b);

(d) with respect to the number and nature of the atomic weapons, and the number, location and capacity of the plants exclusively suited for the production of such weapons, which were in its possession at the time of the issuance by the International Commission of the certificate referred to in Article 32 (c), within (x) months after that certificate has been issued.

ARTICLE 34. 1. Until the first quotas have been established by the International Commission under Article 19, any signatory State may continue to produce concentrates of source materials in amounts not exceeding the amounts which it produced during the twelve months preceding the signature of this Convention.

2. Until the first quotas have been established by the International Commission under Article 23, any signatory State may continue to produce fissionable materials in amounts not exceeding the amounts which it produced during the twelve months preceding the signature of this Convention.

ARTICLE 35. 1. A signatory State may continue to possess, without authorization by the Security Council under Article 2, any atomic weapons which are in its possession on the date of the entry into force of this Convention; but after the issuance by the International Commission of the certificate referred to in Article 32(c), each signatory State shall destroy or transfer such of these atomic weapons as the Security Council may direct.

2. A signatory State may continue to possess, without authorization of the Security Council under Article 2, any plants exclusively suited for the production of atomic weapons which are in its possession on the date of the entry into force of this Convention; but after the issuance by the International Commission of the certificate referred to in Article 32(c), each signatory State shall destroy such of these plants as the Security Council may direct.

CHAPTER VII.

FORMAL PROVISIONS

ARTICLE 36. 1. Amendments to this Convention shall enter into force for all States parties when they have been adopted by a vote of two-thirds of the members of the General Assembly of the United Nations and ratified in accordance with their respective constitutional processes by two-thirds of the States parties, including all the States named in paragraph 3 of Article 37.

2. The conditions under which a State which is a party to the Convention but is not a Member of the United Nations may participate in the adoption of amendments shall be laid down by the General Assembly of the United Nations upon recommendation of the Security Council.

3. The International Commission shall have power to prepare and propose amendments to the Convention, through written communication to the Secretary-General of the United Nations, for consideration in conformity with paragraph 1 of this Article.

ARTICLE 37. 1. This Convention shall remain open for signature on behalf of any Member of the United Nations, and on behalf of any non-member State to which a copy thereof is communicated for the purposes by the Security Council of the United Nations.

2. The Convention is subject to ratification by the signatory States in accordance with their respective constitutional processes. The ratifications shall be deposited with the Secretary-General of the United Nations, who shall notify all the signatory States of each deposit.

3. The Convention shall enter into force upon the deposit of the ratifications of a majority of the signatory States, including Belgium, Brazil, Canada, China, Czechoslovakia, France, India, the Union of South Africa, the Union of Soviet Socialist Republics, the United Kingdom of Great Britain and Northern Ireland, and the United States of America. A protocol of ratifications deposited shall thereupon be drawn up by the Secretary-General of the United Nations who shall communicate copies thereof to all the signatory States.

4. For any State signatory to the Convention which ratifies it after it has entered into force, the Convention shall enter into force on the date of the deposit of its instrument of ratification.

The Draft Convention is printed in full in this issue. For an extensive introduction couched in non-legal terminology see the complete Report entitled Utilization and Control of Atomic Energy published by the Carnegie Endowment for International Peace.

The Availability of Radioactive Isotopes

. . . . . Announced by the Manhattan Project

Production of tracer and therapeutic radioisotopes has been heralded as one of the great peacetime contributions of the uranium chain-reacting pile. This use of the pile will unquestionably be rich in scientific, medical, and technological applications.

Manhattan Project scientific, technical and administrative personnel have, since the inception of the pile, been cognizant of its peacetime potentialities and have, since the end of the war, been active in attempting to realize these opportunities. Since, however, war-built piles and wartime researches had other objectives, a considerable transition in researches, developments, and operations connected with piles must be effected before the supply of radioisotopes can begin to meet the demand.

COMMENTS ON AVAILABILITY OF RADIOISOTOPES

(1) A pile cannot make the extensive variety of radioisotopes producible with the cyclotron because the cyclotron makes use of a much greater diversity in energy and type of nuclear bombarding projectiles. Present piles are copious sources of low-energy neutrons, which can give rise to large yeilds only of isotopes produced by (n,f) and (n,gamma) processes.

(2) Although large numbers of radioisotopes are produced in abundance by the fission of uranium in the piles, their availability is limited by the difficulties in isolating them. It has not yet been found feasible to remove individual fission products from waste solutions of the plutonium extraction process. Most of the fission products being made available are not salvaged by-products of the plutonium process but are ineach case items requiring special production from unprocessed irradiated uranium.

(3) Most of the radioisotopes in greatest demand, such as C 14, S 35, and P 32, must be produced by the irradiation of materials foreign to the pile. Existing piles were not designed for this purpose.

(4) Although a pile is a copious source of neutrons, it is not a limitless source. It is possible to load a pile for nonfission product radioisotope production only up to the limit at which so many neutrons are absorbed in the introduced material that the chain reaction ceases even though the control rods are withdrawn as far as feasible. With available pile facilities, this limit does not permit the production of a sufficient quantity and quality of many radioisotopes to meet anticipated national demands. To accomplish this it would very likely be necessary to build piles especially designed for the purpose.

(5) Technical problems involved in the irradiation of some materials have been, and will continue to be, responsible for delays in making certain isotopes available by routine irradiation. Examples of such problems are: (a) proper canning of the material to prevent rupture of the container by its internal action or by the external action of the coalant, with consequent loss of the material and damage to the pile; (b) careful purification to prevent loss of neutrons by absorption in impurities as well as undesirable radioactivity in the irradiated material; and (c) proper distribution of the material throughout the pile to prevent local overheating or undesirable regulation characteristics of the piles.

ORGANIZATION FOR ALLOCATION AND DISTRIBUTION

In accordance with the established custom of the Manhattan Project of seeking competent outside advice and aid on vital scientific matters, such as nonproject distribution of isotopes, Maj. Gen. L. R. Groves asked the president of the National Academy of Science to nominate a representative committee of outstanding scientists to recommend policies and aid in establishing arrangements for a desirable distribution of those tracer and therapeutic isotopes available from Manhattan Project facilities. An interim Advisory Committee on Isotope Distribution Policy was formed. Two representatives being chosen from each of the major fields of isotope application: Physics—Lee A. DuBridge (chairman), head, Physics Department, University of Rochester, and president-elect of California Institute of Technology, Pasadena; and Merle A. Tuve, head, Department of Terrestrial Magnetism, Carnegie Institution of Washington, Washington, D. C.; Chemistry—Linus Pauling, director, Gates and Crellin Chemistry Laboratories, California Institute of Technology; and Vincent du Vigneaud, head of the Department of Biochemistry, Cornell University Medical College, New York City; Medicine—Cornelius P. Rhoads, director of Memorial Hospital, New York City, and chairman of the Committee on Growth of the National Research Council; and Cecil J. Watson, University of Minnesota Medical School, head of the Department of Medicine, Minneapolis; Biology—Raymond E. Zirkle, professor of botany and director of the Institute for Biophysics and Radiobiology, University of Chicago, Chicago, Illinois; and A. Baird Hastings, head of the Department of Biological Chemistry, Harvard University Medical School, Cambridge; Applied Science—Zay Jeffries, vice-president and manager of Chemicals Department, General Electric Company, Pittsfield, Massachusetts; and L. F. Curtiss, chief of the Radioactivity Section, National Bureau of Standards, Washington, D. C. Paul C. Aebersold,chief of the Isotopes Branch, Research Division, Manhattan District, was chosen acting secretary to coordinate the efforts of the Committee and to effect liaison with the Project.

The recommendations of this Committee on a suitable interim mechanism for allocation and distribution have been adopted without modification. This mechanism is as follows:

(1) All requests will be submitted to the Isotopes Branch, Research Division, Manhattan District, where each request will be reviewed with regard to all technical questions affecting the requester and the Project. This initial review will be made by a group of scientists in the Project who have had much experience in the production of radioisotopes and in technical matters concerned with their use.

(2) Nonproject requests will then be referred to an Advisory Subcommittee on Allocation and Distribution, which has been appointed by Gen. Groves on the nominations of the Distribution Policy Committee. This Subcommittee will have the responsibility of advising on the allocation and distribution of isotopes according to the scientific value of the intended application and the qualifications of the requester. It will operate under the supervision of the Distribution Policy Committee and in conformity with its approved policies. Its members are: K. T. Bainbridge (physics), Harvard University, chairman; J. W. Kennedy (chemistry), Washington University, St. Louis; J. G. Hamilton (biology and medicine), University of California; P. C. Aebersold (biophysics), Manhattan District, secretary.

(3) Each request for material for use in human beings will be referred by the Subcommittee on Allocation and Distribution to a Subcommittee on Human Application, which was similarly nominated and appointed. This Subcommittee will have final veto power on any distribution suggested for human application. Its members, chosen from among radiologists and clinicians experienced in radioisotope uses, are: Andrew H. Dowdy, University of Rochester, chairman; H. L. Friedell, Western reserve University; G. Failla, Columbia University.

(4) Small Panels of Consultants, nominated by the Policy Committee from a number of specialized fields of possible isotope application and from various regions of the Nation, will be available as

advisers on scientific matters connected with requests.

(5) Manhattan Project personnel have not been excluded from membership in any of the nonproject advisory groups. In many cases their membership has been strongly advocated by the Distribution Policy Committee.

(6) Effective liaison will be maintained between the Isotopes Branch of the Manhattan District Research Division, which initially receives and finally effects distribution on nonproject isotope requests, and the associated advisory groups whose functions are set forth above.

PRINCIPLES OF ALLOCATION AND DISTRIBUTION

In establishing initial policies on the distribution of scarce materials, the criterion used has been the maximum benefit to the national welfare, due consideration being given to the limited amount of available material. The initial policies adopted are:

(1) Isotopes will be made available to individuals only through qualified institutions. The administration of the institution will make the necessary financial and legal arrangements, but the material will be allotted for the uses specified in the request.

(2) Secondary distribution of isotopes will not be sanctioned unless indicated and authorized under the original request or subsequently in writing through the accepted channels for requests.

(3) The initial order of priority adopted for the allocation of materials and of production effort is established according to intended use of the material, as follows: (a) publishable researches in the fundamental sciences, including human tracer applications, requiring relatively small samples; (b) therapeutic, diagnostic, and tracer applications in human beings and publishable researches in the fundamental sciences requiring larger samples; (c) training and education by accredited institutions in the techniques and applications of radioisotopes; and (d) publishable researches in the applied sciences. Allocation of material for researches which are not to be published or for routine commercial applications was considered by the Distribution Policy Committee not to fall within its responsibilities. Allocation for routine commercial applications will be deferred until experience is gained with supplying the research needs previously mentioned. Special groups may then be established to advise on such allocation.

Production and Distribution Arrangements Within the Project

As indicated in the section on availability, none of the separate purified radioisotopes is in routine operational production. In some cases research groups have progressed only to the point of investigating how irradiations can best be performed to create a given isotope and how to isolate the isotope in small amounts. In other cases methods are under investigation in development groups for increasing the scale of irradiation and chemical processing. In a few cases it has now become possible to start placing irradiations and chemical processing into the hands of technical operations groups for routine "production."

Research into methods of small-scale creation of most of the isotopes took place widely before the establishment of the Project; since then, it has been carried on extensively by project laboratories engaged in nuclear research. Thus, credit for the results of research on radioisotopes is shared by many nonproject and project personnel. Most of the research within the Project in this regard has been done by nuclear physics and radiochemistry groups at Clinton Laboratories at Oak Ridge, at the Radiation Laboratory of the University of California, and at the Metallurgical and Argonne Laboratories of the University of Chicago.

The present "experimental-lot production" has been carried on largely by the Clinton Laboratories, which since July 1945 have been administered by the Monsanto Chemical Company. In the case of several isotopes in great demand, the Argonne Laboratory has cooperated in preparing materials in proper form for irradiation at Hanford and in testing the results. The Du Pont Company, operators of the Hanford Plant, has cooperated in making irradiations of materials possible at Hanford. The Monsanto Chemical Company has agreed to initiate the routine production of nationally demanded radioisotopes and to distribute them from the Clinton Laboratories under District Administration.

A Manhattan Project Technical Advisory Committee on Isotopes has been active in maintaining liaison between major laboratories of the Project on (1) production and distribution matters concerned with the national distribution program and (2) developments in radioisotope techniques and applications. This Committee is composed as follows: J. R. Coe, W. E. Cohn, R. McCullough, A. H. Snell, and K. Z. Morgan, of the Clinton Laboratories; W. H. Zinn, W. F. Libby, and R. E. Zirkle, of the Argonne and Metallurgical Laboratories; J. G. Hamilton, B. J. Moyer, and R. E. Connick, of the University of California Radiation Laboratory; J. H. Manley and R. Taschek, of the Los Alamos Scientific Laboratories; and, in regard to concentrated stable isotopes, H. L. Hull and C. E. Larson, of the Tennessee Eastman Corporation, Oak Ridge.

DETAILS OF RADIOISOTOPE AVAILABILITY[1]

Pile-produced Radioisotopes

Radioactive isotopes are created in chain-reacting piles by two processes: (1) the fission of U 235 nuclei, which maintains the chain reaction, and (2) neutron absorption by nonfissionable nuclei placed in the pile for the purpose. The former—the so-called "fission products"—exist as a mixture of many radioactive species, each free of significant amounts of stable (carrier) isotopes, in a large amount of the parent substance, uranium. The desired radioisotope must subsequently be separated from uranium and from the other fission products, as well as from any neptunium and plutonium formed by neutron capture in U 238. In the chemical process actually used, the fission products are separated from the mixture either as individual radioactive species or as groups of species.

The Fission Products

The methods now in operation for the preparation of fission-product radioisotopes were developed to meet certain definite specifications, which in turn were set by the biological work in which the radioactive materials were to be used. These specifications called for 0.1—1.0 curie[2] amounts of each of the major fission products in carrier-free, essentially solid-free (less than 10 mg./curie) form, and radiochemically pure (more than 90—98 percent, depending on the species); smaller or less pure amounts of minor species were also required. The radiation intensities involved in working with mixtures of fission products at the curie level required the invention and use of chemical processes which were remotely controlled from behind specially constructed lead and concrete barriers and were economical of material. For these reasons the existing processes and equipment are not suited to isolate fission products in forms radically different from those listed. However, since these methods permit the isolation without carrier of nearly every fission product of half-life from 1 week to 30 years and occurring in significant amount, this inflexibility is not considered to be a handicap.

Inasmuch as a routine production system, with attendant control and standards, does not exist, *no guarantees of radiochemical purity or other such characteristic of any entry in any table may be made*, although every effort will be made

[1] Only those radioisotopes of half-life greater than 12 hours are considered.

[2] The curie is here defined as 3.7×10^{10} disintegrations/second.

to turn out as high a quality of material as possible. Information relating to the known characteristics of any preparation will be furnished.

Nonfission Radioisotopes

(1) *Non-carrier-free radioisotopes; simple (n,gamma) reactions.* The most prominent reaction is simple neutron absorption, yielding a radioactive element isotopic with the parent element. This is the (n,gamma) reaction, which differs from transmutation and fission reactions in that carrier-free material is not produced (except in those few cases where a radioactive chain is begun).

To obtain an isotope of this kind involves the insertion of the element, in a suitable form[3] into the pile and its subsequent removal. Even though in some cases (n,p) radiocontaminants are produced along with the desired (n, gamma)-induced radioisotope, no chemical separation process on the active material will be done prior to shipping (hence the term "service irradiation" to describe such an activation). In order to utilize the available facilities most efficiently, these materials will be exposed in the same containers in which they will be shipped, and only certain quantities will be irradiated.

(2) *Carrier-free radioisotopes.* Transmutation reactions yield radioisotopes which differ chemically from their parents and hence exist *without*[4] stable isotopic "carrier." Only a small number of elements are known to undergo (n,p), (n,a), etc. reactions to any appreciable degree in the pile; however, the few which do yield some of the most important radioelements. In addition to these types, in which transmutations are effected, there is a group of (n, gamma)-induced decay chains which can be utilized to yield carrier-free material. In this case a radioisotope produced by a (n, gamma) reaction decays to a radioactive daughter which is nonisotopic with its parent and with the source material.

A separation of the desired active species from the stable parent and from any (n, gamma)-induced radioisotopes of this parent must usually be made before use. Since the parent exists in bulk and there is often formed a large amount of radioactive material which is isotopic with the parent, the processing is not always a simple matter. The same considerations hold in the case of daughters of neutron-induced decay chains.

[3] In many cases it is advisable to irradiate elements in the form of a compound. The particular compound selected must be such as to lend itself to irradiation under the expected pile conditions. Undesirable radioactive specis and unsatisfactory containers must be avoided. For these and other reasons, the materials to be exposed in the pile for radioisotope production will usually be supplied and packaged by the Project.

[4] Except for impurities below detectable levels.

Again, because of the desire to make available the greatest number of radioisotopes, *such carrier-free species will usually be supplied in the irradiated material, unseparated from the parent and radioisotopes of the parent.* In these cases, as in all others, any pertinent experience in a particular separation will be made available. In a few cases, where the element is rare or where the separation is too hazardous to be accomplished, without special facilities, only separated material will be supplied.

PILE IRRADIATION SERVICES FOR OTHER THAN RADIOISOTOPE PRODUCTION

Materials to be exposed in the pile for radioisotope production will usually be supplied and packaged by the Project. The reasons for this are: (1) to insure that materials and containers introduced into the pile for the desired radioisotope production have minimal parasitic neutron absorption and minimal subsequent radioactivity, and (2 to avoid the possibility of loss of the irradiated material or of danger to the operation of the pile.

Requests for special irradiations, in which the requester desires to furnish the material, may arise because of: (1) other intended purposes than radioisotope production or (2) especially prepared or very rare materials. Such irradiations may require special handling which will be difficult to arrange during the inauguration period of the radioisotope distribution program. When sufficient experience has been gained in handling the normal irradiations and when a scale of charges is determined, special irradiation services may be announced.

AVAILABILITY OF CONCENTRATED STABLE ISOTOPES

In answer to numerous inquiries some brief comments are in order regarding the Project's ability to furnish concentrated stable isotopes. Arrangements have been completed thus far for the production, allocation, and sale of radioisotopes only. It may require considerable time to arrange these matters for such concentrated stable isotopes as may become available in excess of project needs.

The situation in regard to availability is now as follows:

(1) *Deuterium.* There is no heavy water or H 2 available.

(2) *Boron* 10. Small amounts of highly concentrated B 10 may be available for special neutron counter purposes. Prices and distribution mechanism are yet to be determined. These will be announced when arranged.

(3) *Carbon* 13. This isotope is mentioned separately only because of the wide interest in it for tracer purposes, particularly in organic chemistry and biology. There are no project facilities which can at present be converted to concentrate C 13 in production amounts without great expense both in the conversion of equipment and in operation. The cost of C 13 based on operational expenses alone would be considerably higher than costs quoted for C 13 concentrated by chemical exchange methods.

(4) *Isotopes of elements* 3 *to* 82. Small experimental lots of isotopes of nongaseous elements have been concentrated for project nuclear researches using electromagnetic pilot plant facilities of the Tennessee Eastman Corporation at Oak Ridge. Studies have only recently begun on production costs and on the obtainable quality and quantity of concentrated materials. In general, production is quite expensive, and it is difficult to achieve the high isotopic purity desired for many nuclear studies. Arrangements may be formulated for nonproject distribution of experimental lots after more experience has been gained with concentration and assay methods and after project needs become more clear.

As the situation warrants, announcements will be made concerning the availability of concentrated stable isotopes.

Charges

Charges will be made for irradiated materials and processed isotopes, as is the case for many widely useful products resulting from other research efforts. Pending experience, a reasonable charge is considered to be one based on the "out-of-pocket" operational expenses necessitated by the nonproject production and service program. Charges will not include costs of rental, or construction of plant and major facilities or of research and development directed toward the supplying of isotopes in general. The Project will supply the major facilities and develop the production methods, but will assess a charge for the additional running expenses of man power and materials incurred by the filling of nonproject requests. Shipping expenses will be paid by the requester. Details of these arrangements and the prices to be charged may be obtained upon request from the Isotopes Branch of the Manhattan District Research Division.

Mechanism for Making Requests

As explained in the section on "Principles of Allocatoin and Distribution," radioactive materials will not initially be distributed directly to private individuals but only to accredited institutions or organizations. However, materials will be allocated to an individual or a department for the specific uses proposed in the request.

A request may be initiated by a responsible applicant in an accredited institu-

(Continued on Page 24)

The Status of Domestic Legislation . . . .

On June 18, the House Military Affairs Committee amended the McMahon Bill to provide for the inclusion of two military men in the proposed five-member Commission for the Control of Atomic Energy.

The committee also approved an amendment specifying that the Director of the Division of Military Application in the commission should be a member of the armed forces.

As amended by the House committee, the McMahon bill would go far beyond the May-Johnson bill in allowing military representation. In addition to the new provisions for two military men and the military director, it also provides for a military liaison committee of an unspecified number of Army and Navy officers.

Representative Charles H. Elston, Republican of Illinois, obtained approval first of an amendment for at least one military member on the commission. Then Representative Thomas E. Martin, Republican, of Iowa, offered another providing for at least two, and it was adopted. Mr. Martin incorporated his amendment in a clause waiving the legal barriers preventing military officers from collecting their salaries while serving with civilian Government agencies.

Mr. Elston failed in an effort to make the liaison committee a one-way body instead of a two-way. As provided in the McMahon bill, the commission and the committee were to keep each other mutually informed on all their activities. Mr. Elston proposed that the liaison committee need not inform the commission of all its activities, particularly on atomic weapon research.

Also defeated was an amendment that would have made possible the appointment of military men on the nine-man civilian advisory committee provided in the McMahon bill.

Another amendment that failed would have struck at the policy statement in the McMahon bill which authorizes the reciprocal exchange of atomic information.

While the bill did not say so, opponents of the provisions interpret it as meaning exchange with foreign countries. They took the position that no country had information worth exchanging with the United States.

On June 19, the House Military Affairs Committee approved an amendment that would permit the Army, with Presidential authority, to manufacture atomic bombs.

Where the bill conferred authority on the President to direct the commission to delivar atomic weapons to the armed forces, the committee added the phrase "or to authorize the armed forces to manufacture, produce, or acquire any equipment or device utilizing fissionable material or atomic energy as a military weapon."

Through this change, some members pointed out, the Army could obtain authority to continue operation of the atomic bomb plants now operated by the Manhattan District of the Corps of Engineers.

Mr. May, while opposed to the bill, had hoped to report it to the floor promptly for debate on the amendments there. He said that the committee had considered about two-thirds of the McMahon bill, which may go to the House for final action next week.

Proponents of the McMahon bill, which was unanimously passed by the Senate Atomic Energy Committee and the Senate itself, plan a hard fight on the floor and in conference to defeat the amendments which would give military officers far more influence in the commission than the controversial May-Johnson bill.

* * *

The National Committee for the Civilian Control of Atomic Energy issued a statement which declares that the Military Committee action "disregarded the specific recommendations of the President" and military leaders "and of prominent citizens from all walks of life." It added that "such direct military participation in the control of peacetime civilian activities is contrary to fundamental American tradition."

"It is unfortunate," the statement continues, "that the House Committee, on its own initiative, has seen fit to discard the careful balance of military and civilian participation worked out so laboriously by the full Senate committee and approved by all the public officials directly responsible for the nation's military defense and security."

* * *

At a meeting held in Chicago on June 21, and attended by 300 members of the American Physical Society, the following resolution was passed.

For the well-being of the American people and in the interests of national security and for the good of American science, the McMahon Bill (S.1717) as passed by the Senate is a desirable piece of legislation. It is vital that this Bill be passed by the House without crippling amendments. We must not violate the tradition of the country by placing the military in a policy-determining position. Adequate military representation is furnished by the military advisory board provided by S.1717 as passed by the Senate. Complete civilian control of atomic energy must be secured.

Resolutions Passed by Federation of American Scientists

For the maximum progress toward world control of atomic energy, it is vital that the McMahon Bill (S.1717) be passed by the House without delay. The House Military Affairs Committee has proposed amendments which seriously jeopardize the objectives of the Bill as passed by the Senate. Overwhelming public and official approval including that of the President and of the War and Navy Departments, has been given to the principle of completely civilian control of this important policy-making function. The need for legislation on atomic energy control is pressing, and it is urgent that the McMahon Bill be enacted into law at once.

* * *

The Federation of American Scientists is following with great interest the negotiations in the United Nations Atomic Energy Commission. We do not regard the initial statements of position by the United States, the USSR, and the other nations as representing final crystallization of policy nor that all of the issues are by any means clear as yet. There is general agreement of all the negotiating nations on the goals of obtaining (1) security for the whole world against the surprise use of atomic weapons and (2) the development of scientific and industrial uses of atomic energy. We are definitely hopeful that the United Nations Atomic Energy Commission will find techniques for achieving these ends through continued study of the problem. As scientists we are conivnced that control of atomic energy by an international agency is technically feasible.

* * *

International cooperation and free exchange of ideas among scientists all over the world have been essential to full realization of scientific benefits to mankind.

The Federation of American Scientists is concerned about the present status of the liaison between scientists in the United States and those in other countries. The only existing official channel for such liaison is, by default of civilian agencies, through U.S. armed forces sponsorship. Profitable international cooperation in science can be more effectively achieved by U.S. participation in UNESCO, by passage of a National Science Foundation Act, by increased appropriations for scientific liaison to the Division of Cultural Relations of the State Department.

THE AMERICAN AND RUSSIAN PROPOSALS

(Continued from Page 1)

information, should not astound anyone. Neither of the two proposals touches upon the most fundamental issues. As pointed out by Walter Lippman, the insistence on prohibition of atomic bombs and destruction of existing bombs, is a sign of insufficient understanding of what the real danger is. There is no question that the existence of assembled atomic bombs constitutes a serious problem, but the true, long-range threat of atomic energy lies in uncontrolled large scale production of atomic explosives ("fissionable materials"), whether for military or for peace-time applications (atomic power). The importance of "atomic bomb secrets" also has always been (and still is) exaggerated by those with insufficient understanding of the real problem. The essential handicap of the Russians in the atomic arms race lies not in information which we are withholding from them, but in our possession of know-how, production and research facilities, and of trained personnel—advantages which no exchange of printed information can destroy.

* * *

It is important to stress that the Russian proposal did not *reject* the plan for international control and inspection of atomic energy proposed by Baruch; it merely took no stand on it. The Russian statement admitted that the outlawing of bomb production will have to be supported by an effective "supervision"—and so far, in America or England, whoever has attempted to think about what effective supervision means, has ended with some plan akin to the Lilienthal-Acheson Atomic Development Authority. The Russians have preferred not to commit themselves on this crucial point at the present time; Gromyko merely suggested the creation of a Committee to study the problems of control, supervision, and enforcement—while implying that the outlawing of the bomb and the release of information need not wait for this Committee to arrive at their conclusions.

It is to be hoped that as the Russian delegation finds time and opportunity to become steeped in the really fundamental problems of atomic energy, it will share the experience of the groups which have studied the possible mechanisms of international control in the United States and Britain, with the consequent expansion of the area of common understanding.

* * *

It is not only the Russians, who have yet to realize that the future of their nation, as well as that of the world as a whole, depends on world-wide control of atomic energy in all its aspects, and that the existence of a certain number of assembled atomic bombs and the possession of a certain knowledge of the methods of their fabrication are but temporary and relatively minor aspects of this grave problem. The same lack of understanding is quite common in this country, as the reaction of a part of public opinion to the proposals of Baruch and Gromyko shows. Too many still think that our physical possession of bombs and "bomb secrets" gives us a long-range security, and that our offers to "share" atomic energy benefits with other nations are a matter of pure selflessness. Far from it. Uncontrolled development of atomic energy by sovereign nations constitutes as terrible a danger to us as it does to all the other nations. As a free democratically governed nation with highly concentrated wealth and industrial power, we represent one of the most vulnerable targets of atomic warfare. Our interest in avoiding the possibility of such a warfare is so compelling, that we cannot afford to become angry or impatient, if other nations do not agree immediately with what we consider as a generous and equitable plan proposed in good faith. The establishment of an Atomic Energy Authority of the kind contemplated in the Baruch proposal is for us a matter of enlightened self-interest; we must bend all efforts towards persuading the USSR that it is equally a matter of enlightened self-interest for the Russians.

Material in this Bulletin is released for publication at 12 noon, Wed., July 3.

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The present issue constitutes a double number—Volume 2, Nos. 1 and 2.

The opinions expressed in the editorials and other articles printed in the Bulletin do not necessarily represent the official views of any organization.

Availability of Radioactive Isotopes

(Continued from Page 22)

tion by a short letter to the Isotopes Branch, Research Division, Manhattan District, P. O. Box E, Oak Ridge, Tennessee. This letter should request application forms, price quotations, and any essential information not contained in this notice. It should indicate briefly the radioisotopes desired, the approximate quantities needed, and the use to be made of the materials. If the desired material can be produced or made available and the intended use is one for which the isotope is suited, application forms will be furnished the applicant. These forms will permit applicants to supply in a concise and uniform manner the necessary detailed information on the basis of which the reviewers and the nonproject Advisory Subcommittee on Allocation and Distribution will be able to recommend action.

Action on an initial formal application cannot be initiated unless it has been indicated on the application that, when material is allotted, an "Agreement for Order and Receipt of Radioactive Materials" will be negotiated by the business administration of the requesting institution. This agreement relates to business and legal responsibilities in connection with the ordering, receipt, application, and disposal of radioactive materials by the applicant. The honoring of subsequent applications from the same individual or department can be arranged on a continuing basis by the indication of authorization for this in the originally negotiated agreement. All correspondence concerning requests and all forms should be addressed to the Isotopes Branch, as indicated above.

By unanimous decision, the scientists attending the empire conference organized by the Royal Society in London reversed the "closed-door" rule.

Foreign scientists will be free to attend as observers. Not only formal meetings but also all demonstrations and informal discussions in Cambridge this week and in Oxford the following week will be open.

The delegates have expressed strong feelings that the situation should never have arisen and that a scientific body should have demonstrated the principle of free discussion from the start.

BULLETIN OF THE ATOMIC SCIENTISTS

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The Bulletin is published twice a month by The Atomic Scientists of Chicago, 1126 E. 59 St., Chicago 37, Ill. Single copy—10c; subscription price—$1 for 6 months; $2 a year. Special rates for groups. Contributions toward defraying cost of publication are welcomed. Manuscripts should be sent to H. H. Goldsmith at the above address.